Private Sector's Role in Public School Facility Planning

by

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DEDICATION

This professional report is dedicated to my family and friends, and especially my future husband, Jimmy Reumuth, and my mother, Rose Mary Bennett, who provided me with an amazing amount of love and support during this whole process. Lastly, I have to recognize my faith in Jesus Christ, without which, I could not have gotten through these trying and turbulent years of graduate school.

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ABSTRACT

Private Sector's Role in Public School Facility Planning

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This professional report explores the role of private consultants in the school facility planning process. It focuses on such issues as school siting and local government and school district collaboration. As such, it seeks to demonstrate the importance of the school facility planning process and its significance in the community. The primary data for this report is in-depth interviews with a variety of school facility planning consultants. The questions asked in the interviews were broad and open-ended, and the data was studied qualitatively to determine similar experiences of all interview participants. The conclusion of this report presents key findings from the interviews, as well as from background information on the subject.

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CHAPTER 1 – INTRODUCTION

Schools are important assets in any community and act as significant public and social infrastructure. Additionally, education is an important economic factor and also an important quality of life indicator of a city. In the United States, school enrollment populations have increased in certain areas across the nation and have subsequently caused increased spending on education and school facilities. Because of this, communities should invest in the proper planning, design, and construction of schools in terms of the goals and needs of the educational program and surrounding community. In particular, schools should be planned to provide for a sustainable future in conjunction with broader land planning and development goals.

The siting and location of schools have profound impacts on the built environment in terms of new development, transportation choices, environmental factors, and also health considerations. Particularly, people interested in sustainable land patterns and smart growth movements recognize the value of schools contributing to community planning. In many communities across the nation, schools may contribute to suburban sprawl as well as react to suburban sprawl. Also, the location and quality may affect home choice and property values. Because of this, new school construction on the urban periphery can aid in new home construction, further contributing to auto-dependent development patterns and segregated land uses. Many people describe this as a “chicken and egg” scenario where it is unclear who actually started the problem: the school districts or the developers and/or local governments.

With these issues come conflicts between local governments and school districts. School districts often expect that local governments should provide for services and infrastructure improvements for school sites, because to them, it is part of the services that local governments are responsible for. From this viewpoint, school districts feel that they are merely reacting to increased growth and trying to stay on top of upcoming development. They feel that they are in the business of educating children and not providing for basic infrastructure services necessary to run a school. As one University of Texas professor commented, this may be so, but at the end of the day, schools also have to make sure the "potty flushes." Local governments would most likely agree with this comment and insist that just like other developers, school districts also have to provide for basic infrastructure improvements for the construction of schools.

These conflicts are particularly challenging for intergovernmental collaboration which could result in cost savings for tax payers if school facility planning was considered in conjunction with community and regional planning. To complicate matters even further, states such as Texas exempt school districts from local zoning codes. However, school districts have to comply with basic life, safety, and welfare laws in relation to building codes and other such planning laws. Moreover, in states like Texas, the state government determines the geographical boundaries of school districts, whereas local governments set the geographical boundaries of municipalities. Because of this, there are extreme cases where some municipalities have 25 different school districts within their boundaries. Obviously, this makes for a chaotic relationship.

Like some local governments, school districts often hire outside consultants to

plan for new facility improvements. These often include demographers, architects, engineers, program managers, school facility planners, contractors and other such professionals. However, school districts usually hire one main consultant to coordinate the overall planning, design, and construction of facilities. The main consultant is typically an architecture firm, but often times, school districts utilize program management firms instead. These consultants, on behalf of the school district when they do not have their own in-house capabilities, often facilitate public involvement processes and coordinate with other governmental agencies. In these situations, they are particularly important in offering technical and logistical advice to school districts. Furthermore, although they do not establish policy or speak for school districts in all cases, the private sector (in terms school facility planning consultants) represents an important third party entity involved in local government and school district dynamics. Therefore, they should be sought after for their viewpoint and experiences regarding the significance of school facility planning in relation to school siting and intergovernmental coordination.

REPORT OVERVIEW

The main purpose of the study is to understand the role of private consultants in the school facility planning process, school siting, and local government and school district collaboration. In doing so, it also seeks to illustrate the significance of school facility planning and its role in the community. As such, city planners and students of city planning should be particularly concerned with this field and its relationship to the broader context of community, city, or regional planning. Furthermore, it is the hope that

this report will further contribute to the literature on school facility planning, school siting, the relationships between school and community planning, and the need for increased local government and school district collaboration.

The primary data source for this report is in-depth interviews with consultants involved in various phases of the planning process. The secondary data source is an extensive literature review of school planning issues, local government and school district coordination, and the role of school facility consultants in school facility planning. In the end, this report provides key findings from the in-depth interviews and key findings from the literature review.

The following list provides a brief summary of each of the chapters included in this professional report:

- ***Chapter 2 – Background Information*** reviews studies and reports related to school facility planning issues, school district and city planning relationships, and touches on the significance of school facility planning professionals involved.
- ***Chapter 3 – Research Methods*** presents the research methodology and study procedures used for the in-depth interviews with school facility planning consultants. It also introduces the reader to the interview questions as well as providing detailed background information on the various interview participants.
- ***Chapter 4 – Interviews with Consultants*** presents the results of the interviews done with the school facility planning consultants. It is divided into broad

sections emphasizing certain key subject areas and includes the dialogue and responses of interview participants as much as possible.

- ***Chapter 5 – Conclusion*** reviews and synthesizes key findings and offers final conclusions based on the background information and interviews with consultants involved in the planning, design, and construction of school facilities.

CHAPTER 2 - BACKGROUND INFORMATION

This chapter focuses on background information related to school facility planning issues, school district and city planning relationships, and touches on the significance of school facility planning professionals. This is necessary to set a context in order to understand the issues and challenges involved in school facility planning, and thus, the issues and challenges that the interview participants expressed. The background information in this chapter aided and guided the creation of questions and subject areas explored with the school facility planning consultants.

SCHOOL FACILITY PLANNING ISSUES

Like libraries, parks, and roads, schools are important assets to the community. Through quality education, we hope to instill our children with knowledge, leadership, and skills that prepare them for the trials and hardships of life. Schools not only serve the important purpose of educating children, but also serve as an overall community symbol. Outside of education, many communities use schools for other community events and recreational purposes. Consequently, the quality and location of schools have profound impacts on where families decide to live (Weiss, 2004).

According to the National Center for Education Statistics (2007), public school enrollment reached an all time high of 48.8 million in 2004. From 1991 to 2004, student enrollment increased by 16 percent. In 2007, NCES projected a further increase of 9 percent or approximately 5 million more students from 2004 (when data was last

collected) to 2016. NCES expected for midwestern, southern, and western states to have increases and northeastern states to have decreases in student enrollment. Factors affecting these projections included internal migration nationwide, immigration, high level of births from the 1990s, and "resultant changes in the population" (NCES, 2007).

Continued increases in student enrollment nationwide will lead to increased expenditures in high growth student enrollment states. In constant 2004-2005 U.S. dollars, the United States spent about $416 billion in the 2003-04 school year. In 2007, NCES expected this number to increase by 43 percent or by $592 billion in the 2016-17 school year (NCES, 2007). Overall, this represents a huge investment and considerable amount of money in tax dollars. Therefore, citizens and communities should be concerned with how public officials decide to utilize this investment.

Many community advocates would agree that "because school facility improvements mean an influx of capital dollars into a neighborhood, there is great potential to positively impact that community" (BEST, 2006, p. 8) In *Schools for Successful Communities: An Element of Smart Growth* (2004), the U.S. Environmental Protection Agency (EPA), and the Council of Educational Facility Planners International (CEFPI) recognized that:

> Over the next few decades, thousands of school facilities around the country will be built and renovated. Where and how schools are built or rebuilt will profoundly affect the communities they serve. In making the decisions these projects demand, school boards, educational facility planners, and communities will have to meet many goals – educational, environmental, economic, social, and fiscal (p. 7).

Based on this description, there are several school related issues that can affect a community. Although education is the number one priority for school facility

considerations, other school facility concerns include smart growth and community-centered schools which involves school size, school location, school preservation, school siting alternatives and joint-use facilities; transportation, environment, and health effects; as well as community and economic considerations including neighborhood revitalization and social equity issues. The following subsections describe and elaborate more on the above issues.

Smart Growth and Community-Centered Schools

The proper location of schools is important in providing for sustainable and community-oriented environments. Factors affecting school location are school size, new school construction, and existing school preservation or renovation. In particular, advocates of the smart growth movement include the future planning of school facilities as a top priority.

The joint publication, *Schools for Successful Communities* (2004), by CEFPI and EPA is an unprecedented document that speaks to the relationship between school facility planning and smart growth principles. According to this document, “smart growth improves the quality of life in communities by providing more transportation choices, preserving green space, making communities walkable, increasing fiscal capacity, and improving existing infrastructure” (p. 9). Smart growth schools, according to the National Trust for Historic Preservation, “involve the community in school facility planning, make good use of existing resources, such as historic school buildings, are located within neighborhoods and fit into the scale and design of the neighborhood, act as a neighborhood anchor and community center, and are usually small in size” (p. 1).

In this definition, schools should be compact in size, small, adjacent to or located within neighborhoods to provide children with alternative transportation options, make use of existing infrastructure such as historic schools, streets, parks, etc, and provide the community with use of the school after hours. Most importantly, the school district should involve the community in school planning. The U.S. Department of Education brought together educators, facility planners, government leaders, architects, and many others at the National Symposium on School Design in 1998 to discuss the future of schools and their communities. They developed six design principles that focus on schools as "centers of community" and involve citizens in the planning process (Bingler, Quinn, & Sullivan, K. 2003, p. 5). These design principles can be found in the document, *Schools as Centers of Community: A Citizens' Guide to Planning and Design*. In particular, community-centered schools should be integrated within the community fabric or "extend the learning environment to use the community's full range of resources" (Bingler et. al., 2003, p. 3).

School Size

One indication of a community-centered school is its size. Smaller schools that are new or historic better fit into an existing neighborhood or community. In 1930, there were approximately 28 million students in 247,000 schools (CEFPI & EPA, 2004, p. 8). In stark contrast, approximately 50 million students went to school in 97,382 public elementary and secondary schools in the 2005-06 school year (NCES, 2007).

The small school began with the one room rural school house. But, beginning in the late nineteenth century to early twentieth century, society saw the advantages of all

children going to school and receiving an education. As a result, increases in student enrollment contributed to larger school facilities and additional course curriculum and extra activities. School district consolidations, especially for rural areas, were frequent during the middle part of the twentieth century, thus resulting in larger schools. Many researchers attribute larger schools during this period to the space race between Russia and the United States and the belief that larger schools could offer more math and science opportunities. Furthermore, a book by Bryant Conant, called *The American High School Today* published in 1958 advocated for high schools with larger amounts of students to provide them with more high-level courses at a lower cost (Lawrence, et. al., 2002, p. 2).

Many people today continue to advocate for larger schools based on an "economies of scale" principle. However, in *Dollars & Sense: The Cost Effectiveness of Small Schools* (2002), Lawrence, et. al. found that school districts can build small schools cost effectively, and that many had already done so. Furthermore, they found that it is important to measure the cost of education by students that actually graduate rather than by all students who go through the system including those that do not graduate (p. viii). Taking into account how many students that graduate is a better measurement for how well school districts utilize tax dollars for education. According to many researchers, smaller schools of 300 to 400 students in elementary schools and 400 to 800 students in secondary schools seem better as a whole (Cotton, 1996). Specifically, student achievement in smaller schools is at least equal to and often more superior than those of larger schools, and smaller schools have more positive effects on student attitudes, student attendance, discipline problems, violence, drug abuse, and other behavioral

problems, opportunities and levels of extracurricular activity, high school graduations, sense of belonging, relationships with other students and teachers, and general teacher and administrator attitudes towards their work (Cotton, 1996).

The chart below, produced by the Public Schools of North Carolina in *Making Current Trends in School Design Feasible* (2000), is a useful summary for comparing the advantages and disadvantages of smaller and larger schools:

Table 2.1: Advantages and Disadvantages of Small and Large Schools

	Smaller Schools	**Larger Schools**
Advantages	School safety/violence prevention Personal touch with students Advances "Smart Growth" principles Potential improved learning Less bus distance/time Potential Walkable Schools Higher percent of student involvement in activities	Enhanced course offerings Less expensive per student for construction, operation, & administration More/higher-league athletics and student activities Can achieve diversity with normal bussing Less susceptible to family aging of neighborhoods
Disadvantages	Basics-only course offerings More expensive per student for construction, operation, and administration Fewer/lower-league athletics and student activities Difficult to achieve diversity without bussing Susceptible to family aging of neighborhood	School safety/violence problems Impersonal student/staff relationships "Institutional" rather than "community" feel Contributes to sprawl Potential reduced learning More bus distance/time Less percent of student involvement in activities

(p. 9).

School Siting and Location

There are many benefits of small schools for a community, including its compact size and ability to fit in well to an existing neighborhood or community. Increasingly, school districts seem to build schools on the periphery of municipalities where land may be cheaper and in greater supply. As a possible consequence, schools are larger than they

once were and do not always serve neighborhood communities where children can easily walk and bike to school. Like other land uses, some people find that school locations have evolved into large, auto-oriented centers where school districts favor new school construction and abandon smaller, historic, compact schools in urban cores and older suburbs. As a result, disinvestment in older areas by deferred maintenance or abandonment of older schools hurts the physical appearance of the area and also the educational atmosphere (Beaumont & Pianca, 2002).

A major barrier to community-centered schools is state policies that set minimum acreage standards for school sites (Beaumont & Pianca, 2002). It is very difficult to find parcels of land within cities and towns big enough to comply with these standards. The Council of Education Facilities Planners International (CEFPI) previously recommended the following acreage standards that many states adopted:

Table 2.2: Common School Acreage Guidelines

Type of School	**Acreage Standard**
Elementary	10 acres plus 1 acre for every 100 students
Junior High/Middle	20 acres plus 1 acre for every 100 students
Senior High	30 acres plus 1 acre for every 100 students

(Weihs, 2003, p. 1)

As of 2003, 27 states had minimum acreage standards. However, CEFPI has since discontinued its minimum acreage recommendations, and they expressed that a local community can better determine the size and needs of a school (2004).

School Preservation

As previously mentioned, the preservation of existing infrastructure, such as historic schools, is important for future smart growth or sustainable land use patterns. In

2000 and again in 2002, the National Trust for Historical Preservation released a report entitled *Why Johnny Can't Walk to School: Historic Neighborhood Schools in the Age of Sprawl*, in which Constance Beaumont and Elizabeth Pianca described the issues and challenges facing public school districts with historic schools including: school siting policies, funding formulas that favor new-school construction over maintenance and renovation of schools, exemptions from local zoning and planning laws for school districts, and rigid building codes that favor new construction. Specifically, in 2000, the Trust added "neighborhood schools to its annual list of America's Most Endangered Historic Schools" (2002, p. 5). In doing so, they sought to educate the public about the loss of historic schools and have partnered with many agencies advocating for smaller schools, increased facility funding for renovations, smart growth, and linking community planning with school planning.

School Siting Alternatives & Joint-Use Facilities

For urban school districts, renovating and maintaining existing school facilities is very important to keeping schools in the community. Also, building new schools on previously contaminated lands or "brownfield sites" is a useful alternative when "considering the realities of a high-priced urban real estate market, the lack of 'green' space on which to locate new schools, and local budgetary concerns" (Hersh, 2005, p. 1). Furthermore, urban school districts can adaptively reuse existing buildings in order to "create valuable community resources from unproductive property, substantially reduce land acquisition and construction costs, revitalize existing neighborhoods, and help control sprawl" (Spector, 2003, p. 1).

Creating community partnerships to collocate schools with parks, recreation centers, and libraries also creatively takes advantage of existing resources and infrastructure. Local governments, non profit agencies, or other entities that collaborate and share facilities can save a community money by using tax dollars more efficiently. Across the nation, there are many successful joint-use facilities that incorporate other non-educational uses. For instance, Pickle Elementary School in Austin, Texas incorporates a public library, recreation center, health clinic, and community police office in its facility. The City of Austin and Austin Independent School District have found this to be successful and are doing similar ventures at the new Overton Elementary School.

Transportation, Environmental, and Health Effects

The siting and location of schools have important implications on the community in terms of transportation, environmental, and health effects. Research shows that students are more likely to walk or bike to school when schools are community-oriented and in closer proximity to residential areas. Walking or biking to school is an additional form of exercise that may help in controlling obesity. Additionally, since these alternative travel behaviors take cars off the road, the location of schools aid in reducing air pollution.

According to the U.S. Environmental Protection Agency (EPA) (2003), based on the 2001 National Household Travel Survey (NHTS), less than 15 percent of students between the ages of 5 and 15 walked to or from school, and 1 percent biked in 2001. In 1969, 48 percent of students walked or biked to school (p. 1). Even children living within close proximity to schools were not walking or biking in significant amounts. Based on a

Centers for Disease Control and Prevention (CDC) survey in 1999, only 31 percent of children between the ages of 5 and 15 living within a mile of school biked or walked to school, as compared with 90 percent in 1969 (Dellinger & Staunton, 2002).

Also, according to the U.S. Department of Transportation, over half of all children arrived at school in a private car, while about a quarter of all children arrived by school bus (Springer, 2007). Furthermore, the Surface Transportation Policy Project (1999) found that mothers with school children averaged more than five car trips a day, which resulted in 20 percent more trips than other women. In particular, mothers spent more than 66 minutes a day transporting children to various places, including school.

These concerns are important because, according to the CDC, 16 percent of children and adolescents ages 6 to 19 were overweight in 2002, as compared with 4 to 5 percent that were overweight in the 1960's. Also, according to the U.S. Department of Transportation, 27 percent of car traffic in the morning was a result of parents driving children to school (Springer, 2007). According to the EPA, based on information from the CDC, "almost five million children in the U.S. suffer from asthma, causing 14 million lost school days per year. Over the last 25 years, rates of asthma have increased 160 percent up to age 4 years and 74 percent in children ages 5 to 14 years" (2003, p. 2). Furthermore, the EPA concluded that "traffic generated by auto travel to school exacerbates traffic congestion and contributes to the health impacts of auto emissions" (2003, p. 2).

From a study entitled *Travel and Environmental Implications of School Siting* (2003), the EPA studied the effect of school location on travel behaviors and the

environment. In particular, it found that "compared to our sample from existing schools, neighborhood schools would reduce traffic, produce a 13 percent increase in walking and biking and a reduction of at least 15 percent in emissions of concern" (2003, p. 26). Overall, the study came to the following conclusions:

1. School proximity to students matters. Students with shorter walk and bike times to or from school are more likely to walk and bike.
2. The built environment influences travel choices. Students traveling through higher-quality environments are more likely to bicycle and walk.
3. Because of travel behavior differences, school location has an impact on air emissions. Centrally located schools that can be reached by walking and bicycling reduce air pollution (2003, p. 1).

Based on these issues, federally funded Safe Routes to School programs provide communities with money to invest in their pedestrian infrastructure in order for school children to be able to walk and bike safely to school each day. Furthermore, the CDC as advocated for a KidsWalk-to-School program in local communities to increase physical activity daily in children in order to help fight the obesity epidemic.

Community and Economic Issues

Schools also affect a community's economy through the education of children, business retention, and real estate values. Also, the facilities themselves are a cause for social equity concerns and neighborhood revitalization efforts. In a report from KnowledgeWorks Foundation entitled *Public Schools and Economic Development: What the Research Shows*, Jonathan D. Weiss found that public schools impact economic development through "national economic growth and competitiveness, state and local economic growth and business attraction, residential real estate values, and the impact of public school facilities themselves" (2004, p. 5).

From a national perspective, quality education means an "investment in human capital" in terms of "national competitiveness and productivity" and the increase in "worker wages and social stability" (Weiss, 2004, pp. 6-11). From a state and local level, taxpayers spend significant amounts of money on education, and the educational field, in itself, employs many people. Also, businesses are attracted to places with quality educational institutions (pp. 12-18). In terms of residential real estate value, Weiss found that "research shows that, holding all else constant, homes in high-performing school districts sell for higher prices than homes in low-performing school districts" (p. 19). Moreover, Weiss found that school facilities themselves affect economic development through the built environment and neighborhood revitalization (p. 24).

Schools and Neighborhood Revitalization

In a report entitled *New Schools for Older Neighborhoods*, the National Association of Realtors (NAR) and the Local Government Commission recognized the significance that school buildings have in community revitalization. In particular, it expressed, "More and more community leaders are recognizing the power of schools to attract and keep residents in a neighborhood. Leaders in many urban communities are building or renovating schools as part of broader strategies for revitalizing blighted areas" (2002, p. 4). In an Enterprise Community Partners report entitled *Reconnecting Schools and Neighborhoods* (2007), Jill Khadduri, Heather Schwartz, and Jennifer Turnham viewed "school-centered" community revitalization as a strategic community development strategy in low-income communities. In particular, the writers expressed, "School-centered community revitalization combines the improvement of at least one

elementary school in the neighborhood with housing, health, and economic development strategies that help children succeed in school" (p. ii).

School Facility Conditions and Social Equity

Over the past two decades, there have been increasing concerns about the conditions of school facilities. This is important, because research has shown that the condition of a school affects both student achievement and staff morale (BEST, 2006, pp. 6-7). According to NCES (2000), the average age of a public school was 40 years in 1999. Although older schools were more likely than newer schools to report less than adequate or unsatisfactory conditions, the history of maintenance and renovation were also important considerations in terms of a school's functional age (NCES, 2000). Furthermore, the U.S. General Accounting Office (GAO) in the 1990's found that "25 million children attended schools in buildings with at least one unsatisfactory condition. One-third of all public school buildings in the country—about 25,000, serving nearly 14 million children—were in a serious state of disrepair" (BEST, 2006, p. 6). The GAO estimated that it would cost $112 billion nationwide to bring schools into good repair in 1995, while the National Education Association (NEA) estimated it would cost $322 billion to repair existing schools and provide for technology and other educational needs (BEST, 2006, p. 6).

Between 1995 and 2004, 75 percent of school districts in the United States had some type of school construction project. This investment in public K-12 infrastructure was only comparable to the post World War II Baby Boom era (BEST, 2006, p. 9). Also between 1995 and 2004, the U.S. Census of Governments found that school districts

spent about $504 billion in capital expenditures (BEST, 2006). However, although this represented a significant investment, “there continue to be millions of students in substandard and crowded school conditions” (p. 6). One major barrier to school renovations and constructions is the substantial cost. Schools that cannot obtain the adequate funding they need defer on maintenance and construction to the point when it becomes a major issue (NCES, 2000). In the past, it has been up to local school districts to fund school construction, but now school districts are looking more to the states to also aid in funding. This also correlates to increasing levels of lawsuits involving property poor jurisdictions and issues of unequal school facility conditions (Raya & Rubin, 2006, p. 1).

According to Building Educational Success Together (BEST) in *Growth and Disparity: A Decade of U.S. Public School Construction* (2006), “billions of dollars spent on facilities have not been equally available to affluent and low-income communities and for minority and white students” (p. 4). For instance, the least affluent school districts invested $4,800 per student, while the most affluent school districts invested $9,361 per student. Moreover, the least affluent school districts were more likely to spend money on basic repairs for health and safety concerns, while the most affluent school districts were more likely to spend money on educational enhancements (p. 4).

LOCAL GOVERNMENT AND SCHOOL DISTRICT COORDINATION

Community or city planning is concerned with the organization and design of the community in relation to both its built and natural environments. Therefore, city planners

should be concerned with the planning of schools and its relationship to other elements in the community. In 1935, Russell A. Holy recognized this in his dissertation for Teachers College at Columbia University. In *The Relationship of City Planning to School Plant Planning*, Holy wrote the following:

> Intelligent city planning and school plant planning are necessarily intimately related. Neither city planning nor school building planning can be considered adequate unless each considers the other. City planning that does not consider the community's need for school buildings omits what should be among its major concerns. A school building plan that is not conceived in terms of the anticipated development of the city as a whole is likely to be without a sound foundation (p. 4).

Holy recognized this important relationship in 1935. If this is the case, why is there still such a disconnect between city planning and school facility planning? For the most part, the lack of coordination tends to be related to the fact that school districts and cities operate as autonomous entities. School districts have their own elected board of officials, taxing authority, and even eminent domain power. Simply speaking, school district and city staff have different goals and priorities as separate governing entities and often overlook mutual needs and interests that could result in cost savings for both if there was a greater level of coordination. An example of this is the idea of joint use facilities serving both as schools and community uses such as libraries, parks, recreation, and health centers (Vincent, 2006).

A large barrier to coordination between cities and school districts is their different geographical boundaries. In Texas, for example, the state government makes and governs school district boundaries while cities regulate their own boundaries. This results in different boundary overlaps with some entities having to coordinate with many others.

The City of Houston's boundaries, for example, are present within approximately 25 different school district boundaries (TEA, 2007; TNRIS 2006). Logically, this presents itself as a challenge for any city. On the other hand, Northwest ISD in the North Texas region of Texas, for example, has all or parts of approximately 16 different incorporated cities within its boundaries (TEA, 2007; TNRIS 2006). For a graphical representation of this issue, see Appendix A, which illustrates school district and city boundaries in the Houston area.

In order to provide for sound, orderly development, cities have zoning and land development codes that regulate how and where land is developed. However, in some states, school districts are exempt from local zoning codes (Morris, 2004; Torma, 2004). In these instances, state policies have a profound effect on the level of coordination between school district and cities in relation to school facility siting. In contrast, some states in the U.S. have implemented policies which require coordination between the two entities. Under Florida's growth management laws, the State established concurrency policies for school facilities to be in accordance with comprehensive plans. Furthermore, in 2002, the State of Florida also mandated the use of interlocal agreements which required school districts and cities to share information and coordinate planning efforts (Morris, 2004, p. 14).

The Atlanta Regional Commission published a document entitled *Linking School Siting to Land Use Planning* in 2003 to encourage the coordination of local planners and school planners. This document has many good recommendations to coordinate planning efforts. According to them, open communication, data sharing, the establishment of

school siting goals, and formalized agreements are important coordination and best practice strategies (Atlanta Regional Commission, 2003). Similarly, in the 2008 report entitled *Local Governments and Schools: A Community-Oriented Approach*, ICMA's Meghan Sharp explained that in order to eliminate barriers to local government and school district communication, both entities need to establish the following: a formal process for collaboration and communication, a shared vision and plan, and policies and incentives to support community-oriented schools (pp. 14-16).

Experiences by State

California

In California, the results of three surveys of professionals involved in school planning and siting revealed the following:

- Little local collaboration between school districts and local governments exists on new school siting issues in California.
- There is little understanding of the planning processes across different local entities in California.
- No policy framework exists to incentivize and/or guide local agency collaboration on California school siting (Center for Cities and Schools, 2007, p. 8).

Because of this, the Center for Cities and Schools at the University of California – Berkeley and the American Architectural Foundation convened a forum in 2007 that brought together professionals, policymakers, and other stakeholders to explore California state policies in relation to "the location and size of new school sites, building shared use and joint use school facilities and/or sites, and innovative school design" (Center for Cities and Schools, 2007, p.1). In particular, the participants at the forum identified three lessons learned including:

> **Lesson One:** California needs a statewide vision for its ongoing major public investment in school facilities that is connected to broader visions of educational, community, and regional growth and prosperity.
> **Lesson Two:** California needs state level policy incentives to foster effective local practice in building high-quality school facilities and creating prosperous communities, while ensuring educational equity.
> **Lesson Three:** California needs research, best practice documentation, and education to guide local school facility planning. (2007, p. 1).

North Carolina

According to David Salvesen and Philip Hervey in the report *Good Schools-Good Neighborhoods* (2003), key factors that influenced school location and design in North Carolina include suburbanization, economics, local land use regulations, and the "policies and guidelines of the North Carolina Department of Public Instruction (DPI), which encourage communities to 'super-size' new schools" (p. iii). Also, they found that in order to build walkable schools, communities must first create walkable neighborhoods. In the report, Salvesen and Harvey also offered recommendations to local governments, school boards, and the Department of Public Instruction regarding the creation of neighborhood schools.

In 2006, North Carolina had a summit on *Intergovernmental Collaboration and School Facility Siting,* which brought together local government and school board members from areas of North Carolina to discuss the "interdependence" of land use planning and school location decisions, along with barriers, opportunities, and strategies for collaboration. At the summit, participants organized strategies and challenges for intergovernmental collaboration into "institutionalizing collaborative processes, creating a common goal and vision, establishing a culture of trust, improving communication and information, changing policy" (Salvesen, Sachs, & Engelbrecht, 2006, p. 1). In the end,

the summit was instrumental in beginning a dialogue on "collaborative relationships" and the need for future research on the issues identified (p. 1).

Michigan

In *Hard Lessons: Causes and Consequences of Michigan's Construction Boom* (2004), Mac McClelland and Keith Schneider explored decisions in Michigan affecting trends to build new schools on the urban periphery versus renovating existing schools. In doing so, they hoped to "help school officials, community leaders, homeowners, and parents evaluate the full cost of new school construction or renovation" (p. 3). Overall, the researchers found the following:

- New school construction raised property taxes in Michigan
- Proposal A increased bond programs for school construction
- Some parts of Michigan lost students at the same time as building new schools
- School districts used large, new schools to attract new students; state policies favored new construction over renovating old ones
- Architects and financial advisors significantly influenced new construction
- Keeping an existing school open "stabilized" home values in that area
- Even though the State had authority over school facilities and sites, the State Superintendent of Public Instruction provided "little oversight and direction"
- State law exempted schools from local planning and zoning
- New construction on undeveloped sites "generates many new expenses for infrastructure and new construction" (p. 3).

On the other hand, in a 2006 study entitled *Planning for Schools in Michigan: Local School Board Decisionmaking on School Renovation, New School Construction, and School Siting,* Richard Norton surveyed school district superintendents and local governments and found somewhat different circumstances. In regard to intergovernmental collaboration, "school officials consulted with local governmental officials on about half of the initiatives undertaken", but local governments' comments

had only a small influence on school decisions (p. 1). Also, about half of "major facilities improvement initiatives" were renovation projects as opposed to the one-quarter that were new school construction. Moreover, only one-fifth of schools were located on "exurban locations" (p. 1). Overall, the most influential factors for deciding to take on a new facility initiative were "a sense of need to stay competitive with surrounding school districts for student enrollments; facilities issues like overcrowding, aging, or the need for consolidation; financial considerations; and a sense that the school district's mission would be better served by the initiative" (p. 1). The study also found that professional or consultants' recommendations "were moderately influential" (p. 1). Furthermore, the study found that, when school districts reviewed local city plans and engaged the public in facility planning efforts, there was an increased chance that school districts chose to "relocate rather than renovate" (p. 1). This was also consistent with Norton's findings that school officials' and community preferences (along with building codes, costs, and site issues) were influential in deciding whether to relocate.

Other States

Other states such as Maryland, Maine, New Jersey, Oregon, and Florida have smart growth principles to guide future school siting and to encourage better coordination between school facility planners and city planners. For example, the State of Oregon does not impose acreage standards on school sites and requires that local governments work with school districts to incorporate a school facility plan as an element in the local comprehensive plan if the area is a high growth school district, there is light rail planning, or if the area is experiencing an increase of 1,000 or more dwellings a year. Furthermore,

the State of Oregon has laws which prohibit the development of city services such as water and wastewater lines outside of the urban growth boundaries, and school districts have to comply with this in order to receive city services (The Oregon Transportation and Growth Management Program, 2005). As already mentioned, the State of Florida has concurrency policies which require intergovernmental coordination and a school element in the comprehensive plan for each county.

THE ROLE OF THE SCHOOL PLANNING CONSULTANT

Creating Connections, the Council of Educational Facility Planners International (CEFPI) guide to educational facility planning, specifies that the planning process followed these broad phases: "planning orientation, needs analysis, existing condition of facilities, partnership orientation, development of a community vision, comprehensive validation of a vision, master plan vision, and architectural design" (2004, pp. xvi-xvii). CEFPI divided the guide into many chapters that follow the above broad phases; however, the guide also gives general overviews of the following topics:

- Developing an educational plan
- How the design of a building affects the learning environment
- Involving the community and many stakeholders in the planning process
- Designing a master plan
- Writing educational specifications
- Writing design guidelines for the architect
- Conducting site evaluations and selecting a school site
- The significance of technology on schools
- Integrating sustainable design and green building practices
- Working with a design team and choosing an architect and consultants
- Evaluating project options such as construction bids
- Addressing financing options and planning for a successful bond program
- Integrating maintenance and operations into the planning process

- Monitoring construction
- Accessing the project once it is complete.

The planning of schools is complex. Fields of study such as engineering or architecture are more clearly defined and according to Tanner and Lackney (2006), school facility planning "has not achieved the high price that it deserves in practice" and when done as it should be, "requires an extensive amount of hard labor - plus superior knowledge and skills of people representing many disciplines" (p. 70). For instance, in their book on educational facility planning, Tanner and Lackney suggested that:

> Planning activities should be guided by leaders working with groups of individuals who have technical knowledge and skills in the following areas: curriculum planning, environmental psychology, philosophy of teaching and learning, the design of spaces and spatial relationships, implementation of plans, demographic analysis, economic analysis, architecture, engineering, and other aspects of management, strategic planning, and leadership. In addition to these highly important characteristics, those who lead successful planning and design teams must possess good group dynamics skills. (p. 70)

When planning and designing for new facility construction or for renovations on existing structures, school districts often hire the expertise of outside consultants specializing in demographics, architecture, engineering, and other services as mentioned above. Demographers are especially important for analyzing population growth and decline and for projecting future enrollment levels in the district. School districts use these services to assess the need for redrawing school boundaries, closing schools, renovating schools, and constructing new schools in certain areas. Design professionals such as architects and engineers are important for designing sound buildings while considering spaces that meet the needs of the students, teachers, and overall community.

The role of the consultant is significant in terms of the logistical aspects of school

building. They provide the school districts with services that they do not always readily have on staff. As an example, G. Kent Stewart wrote in *Avoiding School Facilities Issues: A Consultant's Guidance to School Superintendents* (2007), "Consultants assume two roles. First a consultant does what the district personnel either don't know how to do or, more likely, don't have time to do. A good consultant will assemble needed information and help people use that information most advantageously" (p. 125). Often, school districts may hire an architecture firm that provides all of the services from pre-bond planning to design, engineering, and construction management needs. Depending on the school district, these consultants may be involved with the public involvement process and bond campaign. Furthermore, they often work with the local planning jurisdiction in getting site plans approved or buildings inspected.

In a recent study done at The University of Texas, researchers gave school districts and local governments separate surveys in order to assess the relationships between school facility planning and city planning in Texas. Of the questions asked, the ones pertaining to the role of consultants are particularly relevant to this professional report. The table below illustrates the responses from school district staff about the extent to which school districts engage consulting firms for certain services:

Table 2.3: Extent of Using Consulting Firms for Certain Services:

	Always	**Often**	**Sometimes**	**Rarely**	**Never**
Demographic forecasting	37.50%	31.25%	15.63%	9.38%	6.25%
Architectural or engineering design of facilities and site locations	84.38%	12.50%	3.13%	0.00%	0.00%
Facilitation of public involvement	68.75%	9.38%	9.38%	9.38%	3.13%

for facility improvement initiative					
Coordination with other governmental authorities (local, state) on district's behalf for facilities planning	40.63%	28.13%	12.50%	18.75%	0.00%
Other	25.00%	0.00%	50.00%	25.00%	0.00%

(McMillan & Bennett, 2007, from survey data)

Furthermore, the survey asked school district staff about the extent of certain factors influencing school districts' decisions on the design and location of major facility improvements. The table below illustrates the results in regard to the recommendations of consultants:

Table 2.4: Extent of Influence on Design and Location of School Facility Improvements:

	Very influential	**Influential**	**Somewhat influential**	**Not a factor**	**Do not know**
Recommendations made by the consultant	17.24%	62.07%	20.69%	0.00%	0.00%

(McMillan & Bennett, 2007, from survey data)

Based on the above information, school districts more than two – thirds of the time (about 68 to 96 percent) either "always" or "often" utilized consulting firms for demographic forecasting, architectural or engineering design of facilities and site locations, facilitation of public involvement, or coordination with other governmental authorities on a district's behalf for facilities planning. School districts almost "always" utilized outside consultants for architectural or engineering services, and a high percentage of them "always" utilized consultants to facilitate public involvement. On a slightly lower magnitude, the survey revealed that school districts used outside consultants for demographic forecasting and coordination with other governmental

authorities. Furthermore, about 80 percent of the school district participants said that recommendations made by consultants in regard to the design and location of school facility improvements were either “influential” or “very influential” on school district decisions. Overall, the survey results demonstrated the importance of consultants and the level of involvement of the private sector in the planning of public schools.

According to Vikas Nagardeolekar and Edwin Merritt (2006) in an article published in *American School and University*, “having an architect (and perhaps a construction manager) who will assess a district's needs, help create a proposal and participate in a campaign” will help school districts pass their bond initiatives, because the consultants will provide citizens with expert and credible opinions. In “Reading between the Lines”, an article published in *School Planning and Management* magazine, Dennis Young (2004) emphasized the importance of school districts hiring competent and quality architects and designers. In particular, he wrote that “a school district is really buying an organization, a team of professionals with the skills, values, capabilities and processes that make a project-delivery system work for the school district” (Young, 2004).

Usually, a school district hires one main consultant, typically an architecture firm, which is responsible for facilitating the overall school building program. Dr. William DeJong and Troy Glover (2003) in “Consultant Leadership”, an article published in *School Planning & Management*, emphasized the following:

> The consultant should be a person outside the district with the authority to cross political and bureaucratic lines; engage the superintendent, board of education, city council and district staff; and have authority to convene meetings when necessary…However, if this consultant is going to be effective, there should be no

> issue associated with her/him having direct and open lines of communication with the superintendent, school board members or other political leaders in the community.

In the previous article, DeJong and Glover emphasized the importance of the leadership capabilities of an outside consultant to act as a sort of intermediary in terms of coordination of interagency logistics as well as with other local entities and the community. It is difficult to say how much this happens in every community and how involved each consultant is in regard to coordination amongst cities and school districts. At least in the Texas study, researchers found that consultants were significant in terms of coordination with other governmental authorities, the facilitation of public involvement on a school district's behalf, and on school district decisions relating to the design and location of school facility improvements.

Intuitively, consultants play a large role in the overall school design and development process. This, in turn, is important for communities because schools provide places to educate children. In regard to this study, interviews were conducted with a variety of consultants to determine how they fit in the overall school facility planning process as well as issues such as school siting and school district and community collaboration. The next chapter focuses on the research methodology for conducting interviews with the consultants.

CHAPTER 3 – RESEARCH METHODS

This chapter outlines the research methods used for this professional report. The basic research methodology for this report is in-depth interviews with school facility planning consultants. The chapter also details study procedures and interview participant selection. Finally, this chapter introduces the reader to the interview questions as well as providing detailed background information on the various interview participants.

STUDY DESIGN

This study is intended to be exploratory in nature and provide qualitative information on the experiences of school facility planning consultants related to school planning, school siting, and experiences with other entities. As such, the primary method of analysis was through interviews with school planning experts. Specifically, these interviewees included four architects, one engineer, one demographer, one school facility planner, two program managers, and one general contractor. The questions were broad and open-ended, and provided for conversations full of rich anecdotal information. The information was then summarized and studied qualitatively to ascertain common experiences of all interview participants.

The interviews are the primary source of information for this report. In addition, a literature review was conducted to gain additional background information. In doing so, another purpose of this report is to link practical experiences of professionals with the theoretical guidelines of the literature on educational facility planning. The conclusion

synthesizes all of this information in order to provide key ideas and issues concerning the school facility planning process as it relates to school siting decisions, community planning, and intergovernmental coordination.

PROCEDURES AND PARTICIPANT SELECTION

It was the intention for the interviews to be conducted with a wide variety of professionals that deal with different aspects of the planning and development process of schools. However, there was no preference for a certain amount of one discipline; in general, because more architects are involved with school facility planning, four architects were chosen for interviews. Based on background research done, school administrators, educational planners, architects, engineers (civil, mechanical, electrical, environmental, etc.), demographers, contractors, project or program managers, maintenance and operation professionals, and product suppliers were identified to be important actors in the school facility planning process. In order to get in contact with representatives of these different professions to do interviews, the researcher looked to the professional organization, the Council of Educational Facilities Planners International (CEFPI).

CEFPI is a professional organization that the researcher became a member of, and through her membership, gained access to an online database of members in the organization. According to the CEFPI website, “The diversity of our members is the key to the Council's success. CEFPI members are architects, planners, engineers, K-12 administrators, higher education professors, construction management firms, facility

maintenance and operations professionals, consultants, manufacturers, suppliers, and state and provincial agency representatives" (2008). The database is an excel file that was downloaded from the CEFPI website, which is capable of being filtered by firms based in Texas and by their chapter name (e.g "Dallas/Fort Worth" or "Gulf Coast"). The excel file has the names of individuals, along with their firm or organization they are affiliated with and their job title. Some of the job titles are self-explanatory such as "engineer", but others such as "vice-president" or "SHW Group" are not so clear. In these situations, the different firms were researched through the internet in order to verify any unknown information such as the type of firm or the type of profession of an individual.

After doing preliminary research about some organizations on the internet, individuals were filtered in the excel file according to the disciplines specified above. Then, interview participants were chosen based on a mix of random sampling and by people the researcher had previously met at the CEFPI conference in April of 2007. Only a few people were chosen that the researcher had met before, because they had special circumstances which provided for a source of useful information. Only one to four people from each discipline were contacted by email in order to set up an interview time.

If someone declined to do an interview, then the next person was selected from the list of CEFPI members by the methods specified above. Because of the limited distance that the researcher could travel, interviews were only conducted with people in the Central Texas, Houston, and Dallas/Fort Worth regions. Interviews were conducted at the participants' office or by telephone communication based on the participants' time and flexibility. The interviews took place in the fall of 2007 and took approximately one

hour to complete.

Any individual that agreed to meet for an interview or agreed to do a telephone interview was asked to sign an informed consent form. If an interview was conducted face-to-face, then the individual was given the form to sign at the time the interview took place. If an interview was conducted by telephone, then the individual was sent the form through a fax machine to sign and fax back. The informed consent form also explained to participants that they had the right to refuse to participate in the study or to not answer questions they felt uncomfortable with; they could also stop an interview at any time.

Moreover, the informed consent form also contained a question asking participants permission to use their name, job title, and affiliated organization/firm in this professional report. If they consented to this, they were then asked to sign indicating this permission as related but separate from participation in the study as a whole. All participants signed both parts of the consent form, thus, the interview summaries contain the names and affiliated organization for each participant.

INTERVIEW QUESTIONS

The reason for interviews instead of surveys was to allow people to expand and elaborate on their role in the school facility planning process and their experiences with other stakeholders involved. Thus, the interview questions were open ended and qualitative in nature. In general, the researcher tried to phrase each question the same way or use the same order and format. However, the intention of the interviews was to be more of a dialogue and not something restrictive. Therefore, some questions may have

been skipped if the interviewee touched on the issue in another answer. Also, some answers may have been longer than others because of time constraints or because the interviewee had a special interest for one issue over the other.

Specifically, the list of questions used in the interviews were as follows:

- What type of services does your organization/firm provide?
- Please explain your general job duties and how they relate to the organization/firm.
- Please explain your educational background and what brought you to the field of school facility planning
- Why do you think school facility planning is important?
  - (if they mention anything about the community) What role do you think schools play in the community?
- In your own words, please explain the school facility planning process.
  - How does your role/job and your firm/organization fit into this overall process?
  - Please explain criteria used by your firm or by school districts in selecting potential school sites. Also, what types of impacts on the community are considered?
  - What do you feel are the most important issues to consider in school facility planning and/or school siting?
  - Who are the major professionals and stakeholders involved in the process?
- What is the extent of your involvement with other organizations such as state agencies, local governments, and the general public?
  - Coordination with other governmental authorities (local, state) on district's behalf for facilities planning (e.g. submitting site plans to planning department, obtaining land development changes, etc.)?
  - Facilitation of public involvement for facility improvement initiative (e.g. bond planning, citizen task forces, workshops to solicit community input, etc.)?
- In your opinion, how much should the community or public be involved?
- In your opinion, how much should other organizations such as state agencies and local governments be involved in the planning of school facilities?
- What do you feel that school districts, local governments, state agencies, the general public or other organizations may not understand about school facility planning?
- Do you know of any successful school district / local government / community partnerships? If so, what are some of the outcomes of these partnerships?
- Could you share / describe any recent projects that you have worked on? If

so, could you explain any planning/design/construction processes involved in the project and the level of involvement with the public and other governmental entities?

BACKGROUND INFORMATION ON INTERVIEW PARTICIPANTS

As part of the interviews conducted with school facility planning consultants, background questions were asked in order to understand the context of their work and how they fit in the school facility planning process. Specifically, background questions asked what type of services their firm provided for school districts, what responsibilities they had in the firm, and also their individual experiences and what brought them to the field of the planning, design, or construction of school facilities. The following subsections provide summaries of the consultants interviewed and provide the reader with an introduction to the next chapter.

Barry Canning, WRA Architects

WRA Architects, Inc. is an architecture firm in Dallas, Texas which focuses their services on government buildings, K-12 schools, offices, and religious facilities. However, their primary work is related to the design and construction of K-12 schools. Within the K-12 building industry their services include research and analysis, feasibility studies, program development, bond planning and bond management, master planning, cost analysis, design, bid phase assistance, and construction management. As with many other architecture firms, school districts contract directly with them to provide the main services for bond planning, design, and construction administration. Depending on the type of contract with a school district, WRA subcontracts out special services relating to food service, civil engineering, mechanical engineering, and acoustical engineering.

Of the four firm principals at WRA Architects, the researcher interviewed Barry Canning on October 5, 2007 in Dallas, Texas. Mr. Canning has a Bachelor of Architecture and entered the field of school design and planning upon graduation. He described his circumstances as depending "on what firms were hiring", and he was able to "sign up" at an educational architecture firm and subsequently "learn the trade." As a current firm principal at WRA Architects, he has a similar background and expertise as the other firm principals. The differences in responsibilities, however, vary in the variety of clients each respective partner handles.

Craig Reynolds, BRW Architects

Brown Reynolds Watford Architects, Inc. (BRW) is an architecture firm with offices in Dallas, College Station, and Houston, Texas. They primarily offer architectural services to institutional type entities such as the federal government, municipalities, school districts, and colleges or universities. In relation to school districts, BRW services include pre-bond planning, site analysis, programming, educational specification development, architecture and engineering (which would include design as well as construction administration), post-construction analysis, interior design, and furnishing selection. BRW is usually hired as the main consultant for school building projects. They do the architecture in-house, but also subcontract out surveying, geo-technical, and various types of engineering services.

Within BRW, the researcher interviewed Craig Reynolds on October 5, 2007 in Dallas, Texas. Mr. Reynolds is one of the firm principals and has responsibilities relating to educational and recreational projects. He is a fellow of the American Institute of

Architects and has both a master's and bachelor's degree in architecture. Mr. Reynolds became interested in school architecture while in college and had the opportunity to work with K-12 schools in his first job. He believes part of his interests in school design and planning stems from a satisfaction of "giving back to the community" and using his expertise in making schools more "education friendly" and more "inspirational in nature". While working in the Dallas area, he has also grown very close to Dallas ISD and chaired the 2002 and 2008 bond programs as a volunteer citizen.

Rocky Gardiner, Templeton Demographics

Templeton Demographics is a consulting firm based in the Fort Worth area, which provides Texas public school districts with demographic studies, new home construction and development reports, attendance zone planning, build-out analysis, enrollment forecasting, and GIS mapping services. Depending on the type of contract, a school district may hire Templeton Demographics to provide quarterly development and demographic analysis on an ongoing basis or just to provide a one-time demographic study.

Of the two firm employees, the researcher interviewed Rocky Gardiner on October 5, 2007 in the Dallas/Fort Worth area. Mr. Gardiner is the Vice President and Manager of Research at Templeton Demographics and is responsible for research and development and for the end product. Mr. Gardiner has a bachelor's degree in journalism and came to the demographics field through work at the North Central Texas Council of Governments (NCTCOG) where he was the Manager of Research in the Research and Information Services Department. He eventually became interested in school district

demographics based on his own experiences with his children and their school district and because of school districts inquiring about NCTCOG services. Mr. Gardiner began work for School District Strategies in 2004, another school district demographics and planning firm, where he met Bob Templeton. From there, he joined Bob Templeton as a partner at Templeton Demographics.

Brad Pfluger, Pfluger Associates

Pfluger Associates Architects, L.P., established in 1972, is a Texas based architecture firm specializing in architectural, planning, and interior design services for educational facilities. These types of facilities can range from fine arts facilities, athletic facilities, new school additions and renovations, and administration buildings. In broad terms, Pfluger Associates provide a full-range of services for public school districts including bond support, pre-design, architectural design, interior design, and construction administration. They will also subcontract out specialty services they do not do in house such as mechanical/electrical/plumbing engineering, civil engineering, and structural engineering services.

From Pfluger Associates, the researcher interviewed Brad Pfluger on October 10, 2007 in Austin, Texas. Mr. Pfluger is one of three firm principals at Pfluger Associates and went to the University of Texas at Austin and obtained an undergraduate degree in architecture. His father is the founder of the firm and had already done a significant amount of work in the school market by the time Brad Pfluger entered the workforce. Mr. Pfluger described it as being a "natural transition for him to get involved in the business" after his father had established a reputation in school architecture.

Randy Fromberg, Fromberg Associates

Fromberg Associates, Ltd., established in 1981, is an architecture firm located in Austin, Texas that specializes in school architecture. They provide architectural services primarily for public school districts, but also serve industrial, commercial, and residential markets. However, according to Randy Fromberg, they probably concentrate 90 percent of their work on K-12 school districts. According to their website, they have "worked with over 70 educational clients and more than 500 projects which include educational facility planning, bond referendum logistics, new construction, renovations, and reproofing."

Within Fromberg Associates, the researcher interviewed the firm principal, Randy Fromberg, on October 12, 2007 in Austin, Texas. He said that he originally came to the field of school architecture because he saw a long-term and constant need for school facilities. Specifically, he expressed, "We were able to develop a client base with an ongoing need for their service, and also a client that either had money or could get money to do projects….very low risk of not getting paid." Also in the interview, he stated, "I enjoy working with a committee-type client, and I like the idea of having an impact in a community that affects a lot in a broad range of people."

Arnold Oates, Texas School Planning

Texas School Planning, Inc. is located in Tyler, Texas and provides management consulting services to school districts Their major products are facilities planning and long range planning for school districts as well as demographics, facilities assessments, and pre-bond services in relation to the facilitation of community involvement. The

demographic firm that they work with is The Omega Group in San Diego, California. In particular, Texas School Planning uses a "holistic planning model" that Dr. Oates developed while he was an instructor at Texas A&M University.

From Texas School Planning, the researcher interviewed the owner of the firm, Dr. Arnold Oates, on October 24, 2007 through telephone communication. The firm itself includes only himself and his wife and they contract employees based on project needs. Dr. Oates has a doctoral degree in Educational Administration and worked as a school superintendent for 16 years. He came to the field of school facility planning through his experience of "having to do it as a superintendent." Previously, Dr. Oates also taught courses in school law, school facility planning, and personnel administration to graduate doctoral students at Texas A&M for 13 years.

Trey Schneider, PBK

According to PBK's website, they are a "comprehensive planning and design firm that specializes in architecture, MEP engineering, civil engineering, structural engineering, master planning, technology consulting, exterior building envelope consulting and interior design." Founded in 1981, they have offices located in Houston, San Antonio, Dallas, Fort Worth, League City, McAllen, Austin and El Paso. The firm's special market is in educational facilities, but they provide services to other public institutions and the healthcare market. According to their website, they offer school districts with master planning, architecture, MEP engineering, civil engineering, technology consulting, roof consulting, facilities assessments, bond planning and communications, program management, interior design, graphic design, and construction

administration.

At PBK, the researcher interviewed Trey Schneider, the president of the civil engineering division, on October 26, 2007 in Houston, Texas. He described PBK as an architectural and engineering firm or "A/E" firm, which he likes to refer to as "Big A and Little E", because "it is mostly architecture". According to him, the engineering divisions are smaller and were created in the past 7 years. In total, they have about 50 people that work in the civil engineering division. Mr. Schneider has a bachelor's degree in civil engineering, and upon graduation, obtained his first job at a small consulting firm. From there, he first gained experience in the school district market through some of their work with a local school district. He said that the architect working with their firm used them often and "once a consultant becomes kind of an expert in that area [school districts]…then you have a tendency to be called upon by other architects doing the same thing."

George Pontikes, Satterfield and Pontikes Constructions

Satterfield and Pontikes Constructions, Inc. (SPC) is a contractor and construction manager business that specializes in K-12 and higher education markets. According to George Pontikes, the business operates about 80 percent in those two markets, but also does projects in other institutional and government markets, commercial, entertainment, manufacturing, retail, disaster relief, and airport facilities. According to SPC's website, they offer services in construction manager at risk, competitive bidding, negotiated work, design-build, self-performing concrete and site work, pre-construction services, integrated 3-D modeling and virtual design and construction, and Leadership in Energy

and Environment Design (LEED). According to their website, they also have 450 employees "operating in offices from Texas and Louisiana."

From Satterfield and Pontikes Constructions, Inc., the researcher interviewed the CEO and President, George Pontikes, on October 26, 2007 in Houston, Texas. Mr. Pontikes went to school at the University of Texas and has been in the construction business since 1976. He first started out in the office and commercial building industry, but was put out of business in the 1980's during the Savings and Loans crisis in Houston. In 1989, he founded his existing business concentrating on educational facilities because "there was nothing else to build" at the time. Overall, he says that it has "been a good business for them" and that he has "enjoyed working for school districts."

Kenneth English, DMJM Management

DMJM Management is a subsidiary of the global corporation, AECOM, and provides construction management and program management services for large scale projects. Basically, they act as an extension of school districts and contract with clients that need facilities staff on a temporary basis. DMJM works with K-12 school districts, federal agencies such as NASA, GSA, and the Department of Defense, and some higher education institutions. According to Kenneth English, DMJM Management's "biggest client" as of 2007 was Los Angeles Unified School District. Also as of 2007, DMJM was working with Houston ISD, Dallas ISD, Fort Worth ISD, and the Dallas Community College District in the Texas region. DMJM contracts directly with each owner, and then subsequently subcontracts out various experts for school facility planning, design, and construction. Each project manager within DMJM has a team they have built with the

client. In the Houston area, DMJM has six different firms they subcontract work with including engineering firms, an architectural firm, a landscape planning firm, and a general contractor.

The researcher interviewed the program manager Kenneth English of the DMJM Management team based in Houston on October 26, 2007. Mr. English is an architect by training and received his master's degree in architecture from Texas A&M University. DMJM Management is the first firm he has worked for as a program manager. Previously, he was an architect in an architectural firm for about 30 years. Mr. English came to know DMJM through being the "principal in charge" of one of the schools that DMJM was managing. After his "partnership fell apart" with the architectural firm, he came to DMJM to work as a lead program manager.

Robert Gadbois, Owners Building Resource

Owners Building Resource, LP is a program management firm that provides facility assessments and facility planning for school districts, as well as construction program management services. Based in Austin, Texas, their main client has been school districts and they have been in the program management business for 14 years.

From Owners Building Resource, the researcher interviewed the Executive Vice-President and managing partner of the firm, Robert Gadbois, on November 6, 2007 through telephone communication. His responsibilities for the firm include facility planning services and corporate management. Mr. Gadbois is a civil engineer by training, and has been involved with facility planning throughout his career. He began his focus on school districts after joining Owners Building Resource in 1996.

CHAPTER 4 – INTERVIEWS WITH CONSULTANTS

This chapter presents the results of the interviews done with the school facility planning consultants. It is divided into broad sections and describes the answers to certain key questions and subjects. Within each section, the responses and dialogue of each consultant is represented largely independent of each other in order to showcase the varying degrees of insight and experiences. In addition, each section begins with a broad summary to address similar responses and experiences, but the core qualitative data is included as much as possible to enable the words of the interviewees to manifest into a collective narrative about school facility planning. The last chapter provides conclusions and synthesizes key points.

THE IMPORTANCE OF SCHOOL FACILITY PLANNING

In the ten interviews done with the school planning consultants, questions were asked about why they think school facility planning is important. This was necessary to not only understand their attitudes about schools in general, but also how they see their role in the planning of schools. Interview participants gave various answers, but in general, they said that school facility planning is important because it impacts the quality of the learning environment, that schools act as centers of communities, and that it is important to plan for the effective utilization and efficient use of public assets.

Important Impact on the Quality of the Learning Environment

As Trey Schneider stated, schools are important because “we are dealing with one

of our most precious commodities – and that is our children." George Pontikes, who has also built jails as well as schools, believes that schools play the most important role in the community, and that unfortunately, he sees "kids going to school and see kids going to jail." Besides parents, he believes that schools play the most critical role in helping kids get through life. He is also proud to say that there are a "couple of hundred thousand" students attending schools in Texas that they have built.

According to Barry Canning, schools have an important impact on the quality of the learning environment. It not only affects the welfare and attitudes of students, but also the welfare and attitudes of staff and teachers. Craig Reynolds echoed these sentiments and feels that school design as well as planning needs to be "inspirational in nature" and make a child, teacher, or parent coming into a building feel "excited to be there". Similarly, Brad Pfluger believes that quality school design and planning supports the profession of education and the way teachers want to teach. Today, there are trends toward different teaching styles and the school classroom environments have to reflect these styles.

As Brad Pfluger and Craig Reynolds pointed out, there are various studies that describe the benefits of the quality of the educational environment on children and how it affects their learning, whether it be natural light, colors, or the fact they take pride in a facility that is maintained and in good condition. In doing so, Brad Pfluger believes that school designers and planners have a direct impact on the future generations by the schools they design.

Schools Act as Community Centers

According to Barry Canning, depending on the community, and especially in the case of small towns or rural areas, schools act as centers for community events such as football games and other sports. Also, in the case of some schools with auditoriums, school facilities become "local community centers" for their particular enrollment area and they act as "a magnet for the local cultures." Brad Pfluger pointed out that many school facilities are used on nights and weekends such as utilizing gyms for recreational purposes, auditoriums used by communities for performances, and churches renting spaces for worship.

Craig Reynolds described schools as being "the synergy that makes the community come together. In many of our neighborhoods that still have school children, schools are often times the focus of the community." They bring "spirit to the community" and bring neighbors together in a "common cause." Brad Pfluger addressed similar issues when he said, "schools tend to be a common ground that a lot of people can gather...a middle ground between a lot of community groups."

Randy Fromberg works with mostly small town and rural school districts, and he considers the school as the "real heart of the community." In these cases, school districts are financially the largest employer in a small community and have more funds than other local jurisdictions. Because of these things, Mr. Fromberg considers school districts as very "significant to the social structure."

In Kenneth English's experience, his company managed 16 schools building projects in Houston ISD at about $185 million worth of work in 2007, and he feels that

their projects were the only new construction that had happened in those urban neighborhoods in many years. In these instances, schools are important in initiating neighborhood revitalization and giving people pride in their community.

Planning for the Efficient Utilization of Schools

In many of the interviews, the consultants emphasized the importance of planning for the effective utilization and efficient use of public assets. In addition, many find that the use of experts in the field of school planning and design is necessary in order to plan for schools properly.

Craig Reynolds pointed out that from an operational standpoint, "someone who is familiar with how schools go together has the opportunity to dramatically impact the cost as well as the building's ability to maintain the life expectancy." Also, he pointed out the importance of "functional equity" and keeping all facilities across the district at the same operational level. For instance, as of 2007, out of 218 campuses in Dallas ISD, about 50 percent of them were over 50 years old and they were no longer functioning at the level they should. This has been an important issue in recent bond programs at DISD. In addition, Mr. Reynolds addressed the issue of school utilization. He believes that proper planning and public outreach is important for neighborhoods having to deal with schools that may be under-capacity or are considered "obsolete". In these cases, schools may have to be given other community uses or be rebuilt altogether if they are no longer functioning for today's needs.

Rocky Gardiner of Templeton Demographics feels that the school demographics field is about "giving children an equal opportunity to grow." School districts without

adequate information concerning future growth may not adequately distribute new school construction, renovations, or expansions fairly across a district. In his interview, he expressed, “Districts all have smart people working for them. They just need information. That’s really what our passion is – just giving everything they need to plan the right way.”

Trey Schneider also cited similar concerns and said that “it is very important for the administrators of school districts to be up on development as well as to utilize resources available to them – be it demographers and consultants, and also architects.” He believes that, especially in the case of fast-growing suburban communities, school districts must anticipate future growth and plan accordingly to build future schools or obtain new school sites when land is increasingly expensive and hard to find in developed areas. In the fast growing school district of Cypress-Fairbanks ISD, for example, the school district opened up two 3,000 student high schools simultaneously in the 2006-2007 school year. In the case of older school districts, he also feels that proper planning involves planning for periodic maintenance and repairs, because it can be more expensive to repair than just to rebuild.

Arnold Oates expressed that, in regard to planning for school facilities, “you are going to have a need for facilities, and you are either going to plan them well and fulfill the mission of what you’re doing; or you are going to go ahead and spend the money, and end up with a poor plan and consequently regret what you have done.” For instance, school districts may think they are saving money by adding additional classrooms to a school or adding portable buildings, but in reality, they fail to see that the actual problem

is that the core of the building is too small (cafeteria, gym, auditorium, library). Additional classrooms will not help a school that cannot get all of their students to eat lunch at a decent time. That is why he likes school districts to "step back" and utilize something like his "holistic planning model" to assess everything from current and future enrollments, to students per classroom, and capacity needs.

THE SCHOOL FACILITY PLANNING PROCESS

Of the diverse group of professionals that were interviewed, all gave similar descriptions of the school facility planning process, but sometimes slightly different accounts. These differences are mainly because of the different expertise the consultants have and because of their different involvement in the various stages of the school facility planning process. It is necessary to dive into some of the different descriptions, insights, and processes in order to gain an understanding for the complexity involved, and in doing so, an appreciation for their work.

Architects' Perspectives

In relation to the overall school facility planning process, Barry Canning of WRA Architects provided a good description. According to Mr. Canning, architects are now brought in very early prior to the planning of bond issues and play more important roles in assisting with the planning, budgeting, and scheduling of school facilities. Once a bond passes, architects will address more detailed planning in terms of floor plans, elevations, and the overall design of various systems. In general, Mr. Canning described the school facility planning process as beginning with the "programming and schematic design" of a

building and then leading to “design development” where the architect “will take a real basic design and start to get the engineering into the design.” From this, it proceeds to “construction documentation” which involves the actual development of a set of documents used for bidding and construction. In the actual bidding process, contractors use these documents to prepare their bids for proposals. In Texas, the most common bidding process is the “competitive bid proposal” (Canning, 2007). After a three to four week period, the school district and architect will open the sealed bids at one time, and the architect will make a written recommendation to award a contract to a particular bidder. The last phase in school planning then involves the construction phase and construction administration, and the architect, in WRA’s case, will report on the quality of the work, review applications for payment, and monitor progress in the field.

Besides the important role of the architect, Barry Canning expressed that the bond planner or financial advisor is a key professional in the planning process. That person is the expert in assisting school districts in preparing bonds, selling bonds in financial markets, and also developing payment schedules. He said that typically bond planners contract directly with school districts. In addition, he said that school districts typically hire out separate consultants for demographic work and that it is not unusual to contract directly with a civil engineer to upgrade utilities, roads, and other infrastructure to a site.

According to Randy Fromberg, his firm first starts looking at the projected growth of the school districts, what the future needs are relative to the existing facilities, and how they can provide new or renovated facilities to accommodate the future needs. In his experience, small or rural school districts typically do not have in-house resources, and

part of his firm's role, besides providing technical support, is to educate these types of school districts on the school facility planning process. In general, the types of projects that Randy Fromberg's firm deals with are small or rural school districts. In these cases, his firm looks at the whole school system and designs everything the school district needs. This may happen all at once or in phases over a period of years, but in general, they do the whole package. Also, his firm establishes long term relationships with their clients and are often asked back to design future bond issue projects.

In terms of key stakeholders and professionals, Randy Fromberg finds that the major players are the school leadership which includes the board and the administration and also the architect. In general, he said that they do obtain input from school staff, teachers, and some input from the community, local businesses, and students. As with all of the other architects, his firm is usually hired as the main consultant, and in turn, they hire out other services for facility needs such as mechanical, electrical, structural, and civil engineers, and specialty consultants for things such as food service design. However, in certain cases, such as Mr. Fromberg's experience in Manor ISD, the school district directly hired a program manager to oversee the overall bond package and also a construction manager to oversee the construction process of schools. Under a contractor or construction manager, there may also be other subcontractors such as plumbers or electricians. In general, there are many ways of contracting services, and according to Mr. Fromberg, it typically depends "on how many contractors the owner wants to hold."

In Craig Reynold's experience, when called in strictly as an architect, the first priority is to assess the existing conditions. If it is a new school, then "you have to go in

and understand the site context" and look at the different elements of the site and the adjoining uses. Also, he finds that school districts interested in "Leadership in Energy and Environmental Design" (LEED) buildings should start planning for it before even selecting a site for a building. Besides the basic phases that have already been described, Mr. Reynolds emphasized the importance of knowing who the constituency is and how those people will utilize a particular building. He also emphasized the importance of going back to the community and getting their feedback at each of the phases of design, to make sure "the building is achieving the community's goals, programs, aesthetic, and context goals, etc."

In Mr. Reynolds' particular case, his firm does not do construction management for school districts because he believes it is important to separate the liability from the architects. However, he did say that some school districts approach construction from a design/build emphasis. Also, his firm (who works frequently with Dallas ISD) usually works with one specific school and not a whole bond package. According to Mr. Reynolds, some of the smaller school districts may give all of their projects to one firm, but in doing so, they are "putting all of their eggs in one basket." However, his firm may also work with school districts in the pre-bond planning stages to assess existing buildings, but in the end, may only work on a few projects within the bond package. This is similar to Brad Pfluger's situation, in that his firm does everything from master planning a whole district to just designing an individual school.

In terms of key stakeholders and professionals in the school facility planning process, Craig Reynolds said that the architect is typically the main consultant and school

districts seldom contract directly with engineering firms. Also, he emphasized that the architect understands how all of the disciplines coordinate together and that he or she tends to have the knowledge of the impact of engineering work. However, a school district may contract directly with specialty engineers to work on specific aspects of a building such as an air conditioning system. Also, early on in the school facility planning process, Mr. Reynolds' firm may hire civil engineers, geo-technical firms, or surveyors in order to make sure the proper utilities and infrastructure are in place for school sites. In terms of local governments, services such as fire, police, and other city officials are important from a regulatory standpoint. Demographers are also important in assessing new growth and for boundary planning purposes. In Mr. Reynolds' experience, some larger districts have their own internal demographics and boundary work teams. Apart from these consultants, the main stakeholders are the school children, parents, faculty, administration, trustees, and the community at large.

Engineer's Perspective

In Trey Schneider's experience as an engineer and working for a school architecture firm, the school facility planning process first begins with a school district evaluating the demographics of the district in order to anticipate where future growth will occur. Once a school district sees a need for services, the school district will seek a firm like PBK to do all of the planning including everything from pre-bond planning, bond planning, and the study of existing facilities. In the planning stages of schools, PBK first receives information from demographers and then does facility assessments to see where the school district stands in terms of future buildings, renovations, expansions, and

overall maintenance concerns. Then they assign dollar values and determine some type of appropriate bond issue. Afterwards, they bring this to the school board and community task force for consideration and review. His firm also works with the school district or community task force to provide marketing materials. After the planning is approved, it is just a matter of design, engineering, and construction phases. In general, he describes PBK as a "one stop shop" for school district needs. They even do their own engineering in house, which Mr. Schneider himself started.

In terms of key stakeholders and professionals, Trey Schneider believes that the primary consultants are demographers, architectural planners for educational facilities, and civil engineers "because the tract of land can be so expensive to develop." He especially feels that civil engineers play an important role in site selection and providing analysis on utilities, roads, and other infrastructure. For the building itself, engineers that focus on the mechanical, electrical, and plumbing aspects become more important as the project evolves and the actual building is being designed and constructed. Other types of consultants that play less important roles are for landscaping, food, pool, or acoustical services. From the inside of the school districts, Mr. Schneider considers the facilities department or "staff architect" in larger school districts as very important for overseeing bond programs. He said that in the smaller school districts, the superintendent or assistant superintendents may play more significant roles.

Demographer's Perspective

As a demographer, Rocky Gardiner's role in the school facility planning process is somewhat different than the overarching role of the architect. Once school districts are

engaged, Templeton Demographics first sits down with the district and whoever is in charge of the student database to obtain basic enrollment information. They then try to learn everything they can about the district and also download historical information from the Texas Education Agency (TEA) website. Afterwards, they use the school district's Geographic Information Systems (GIS) layers, layers from city or county sources, and also layers they have developed themselves to make a map in order to go back to the school district to find if they have the correct school boundaries. Then, they may drive around the district to "get a feel for it" and also study housing data from various sources if it is in a metropolitan area. Templeton Demographics also partners with a firm called Metro Study to provide housing information. If no housing data is available, such as the case with a rural community, they will contact cities, counties, or developers to find information about what has happened historically to impact enrollment in a particular school district in the past 5 years.

For future enrollment information, the focus is more on enrollment projections. In their enrollment projections, they combine basic cohort-survival methods with housing yield analysis of future and existing developments. According to Mr. Gardiner, it typically takes 60 to 90 days to complete a demographic study. Besides providing demographic information, they also utilize GIS to geocode the addresses of existing students to then show on a map where schools need to be built or expanded to accommodate future needs. However, Templeton Demographics does not locate where future schools should go, but when asked by the school board, they can recommend certain areas.

When asked about key stakeholders in the planning process, Rocky Gardiner expressed that demographers and architects are the most important consultants involved with school districts. He said that it was common for architects to recommend their firm and for their firm to recommend them. In regard to architectural firms, he feels that they play a rather important role in helping school districts through the overall planning, designing, and construction of schools, and in particular, said that architects "kind of hold the district's hands a lot of times."

School Planner's and Program Manager's Perspectives

Arnold Oates with Texas School Planning works mostly in the pre-bond stages of school facility planning and provides more consulting services for working with the community in assessing their needs and goals for the bond program. Once the community has decided what they want, he facilitates community groups and helps them get ready for a bond issue. He especially emphasized that he has to stop once a bond comes up, because a district cannot hire someone to promote a bond program. In the pre-bond planning stages, Texas School Planning also works with a demographic firm in San Diego called The Omega Group. In particular, he approaches everything from his "holistic planning model" which he developed with a graduate student while he was an instructor at Texas A&M. This plan looks at the school planning process from a cyclic perspective instead of from a linear approach. His model can be found in Appendix B, but in general, the model follows these broad stages: assessments, master plan development, marketing plan development and implementation, implementation and construction, and evaluation plan (Texas School Planning, 2008).

From Arnold Oates' perspective and his emphasis on school district and community involvement, he believes that "the biggest stakeholder are the kids." After that, the stakeholders are the school board and the leadership provided by the superintendent, staff, and the community. In general, school districts solicit community involvement through bond committee task forces. The task forces may be appointed by school board members and can sometimes involve a large number of people. If a bond program comes up for election and is passed, often times school districts use the same task force or create a new citizens' task force to oversee the implementation of the bond program. Arnold Oates feels that the way to promote a bond issue is through the leadership and involvement of a citizen task force.

Robert Gadbois, with Owners Building Resource, is a program manager and works "primarily as a technical resource and as a facilitator." He described his company as an "owner's agent" and that they typically work independently of architects and contractors. However, they often times engage a civil engineer, geotechnical engineer, environmental professionals, and whatever jurisdiction that has authority over the respective school sites. This is similar to the approach of DMJM Management that Kenneth English works for. For instance, Mr. English said that the reason school districts use program managers is because they can hire them for a temporary time to manage bond programs, instead of having to "carry a large facilities group" of district employees. In doing so, school districts can actually roll the cost of the program management services into the price of the bond instead of using their operational budget to fund employee salaries. Specifically, Mr. English thinks that school districts receive better

quality services from firms like his than if they were hiring directly.

From a program management approach, Robert Gadbois described his company's approach as "a little different than most." From his perspective, there are three components to a successful facility plan: first, clearly defining the constructional and programmatic goals of a school district; second, looking at the physical condition of facilities and assessing the effectiveness of the school facility to support the instructional and programmatic objective; and third, engaging the community at large, and working with them to "solicit their feedback on what they want their school district to be and using them as a sounding board for evaluating the data and reviewing the options for facility improvement."

Contractor's Perspective

George Pontikes, the CEO and President of Satterfield and Pontikes Constructions, explained that if someone looks at the traditional delivery process in school facility planning and construction, that person would see a "broken process", regardless of if it was "design/build", "construction manager at risk", or the typical "design/bid/build" or "hard bid" process. According to him, the typical delivery method he has seen is that "you first bid a job, design a job, engineer it, bid it, permit it, build it, and the whole nine yards." This is what he refers to as "hard bid" or the "design/bid/build" process. Based on what he knows, until 1996, there was no other available delivery process in the public works sector in the State of Texas. But even the new alternative processes are not good enough to him. Specifically, Mr. Pontikes said, "the existing so called collaborative, or so called alternative delivery methods available in

construction, are in my opinion, nothing but a version of the same old design/bid/build or hard bid." Moreover, he said that everyone involved has the same basic roles between the architects and engineers, other consultants, the owners, and the contractors.

In his firm, he has personally invested a considerable amount of money into the development of new processes that he believes will change the way they do business. As an example, his company selected the consultants and subcontractors for his new office building based completely on their qualifications. On that project, they used a system called Building Information Modeling (BIM), and the project was designed in an open format, 3D environment using many different software, and merging all of the information into one format it was used to design, schedule, and document the building. He feels that it is a process that people in the construction business will see develop as they move into a more technologically friendly market. He especially thinks they will see a shift towards "master builders", and see architects, engineers, and contractors teaming together with special purpose entities or single purpose entities, or actual collaborative companies rolled into one.

In relation to key stakeholders and professionals involved in school facility planning, design, and construction, George Pontikes expressed that the superintendent in charge of facilities and programming is "the boss" and that sometimes the "bond facility mediator" can also play one of the more important roles. As mentioned by Barry Canning, Mr. Pontikes also believes that architects have taken on a more significant role in the process. He explained that they "primarily do the facilities and the programming…and the budgeting, unfortunately, and obviously do the design." In

addition, he thinks the contractors and the subcontractors have taken on a more active role as it has become important to get school projects on budget. Increasingly, school districts are now involving contractors early on in order to have more realistic price projections. He expressed that “in today’s market, you need to be tracking cost as you do the design phases, probably earlier than what they are accustomed to.”

SCHOOL SITING

As mentioned in the literature, the siting and location of schools have important implications for the community. Because of this, the consultants were asked about the criteria that school districts or their firms use to select potential school sites, as well as overall impacts on the community that are considered. Every consultant gave somewhat different answers and different insights into the criteria used, but they generally pointed to the availability of land relative to the location of the student population, child safety considerations, the availability of utilities and infrastructure, environmental factors, as well as the cost of land as being the most important issues.

In Barry Canning’s experience with WRA Architects, many developers simply donate sites and school districts must then “take what they can get.” WRA does assist with site assessments in terms of the verification of utilities, the constructability of a site, and possible recommendations for hiring an environmental firm (school districts contract directly with this type of firm) to do soil borings in order to determine unusual subsurface soil conditions. As an example, Barry Canning describes certain areas in the DFW area as “highly variable” and having “significant issues with alluvial soils”; however, in most

cases east of the Trinity River, the soils are fairly predictable and WRA knows the types of foundations they must work with.

Barry Canning believes the primary issue involved with school siting is safety, especially with young children. WRA architects may also look at site circulation in terms of the separation of vehicles and pedestrians. Also building placement is important in terms of access to buildings, relationship to different functions with respect to service access, vehicle access, and other such concerns. Environmental considerations such as the orientation of a building to the sun and the use of plantings to shade a building are also important for structure and system efficiencies.

Besides basic infrastructure and civil improvements, community impacts such as walkability and residential or neighborhood location is already considered by school districts and developers. However, this may not be possible, particularly in rural areas where schools need to be located to draw students from various regions. Overall, Mr. Canning stated that “we do try to assist a school district with planning and infrastructure to a certain extent; but it involves cooperation from the city, cooperation potentially from the developer, obviously cooperation from the school district’s part as well.”

To Craig Reynolds, the most important aspect of school siting is determining the correct location in terms of future population needs. Once a school district has a general location, then they start looking at the cost of the property, transportation access, improved streets, safety, topography of the site, natural constraints on the site, adjacent land uses, whether there is water, sewer, storm sewage, or whether they need to create a detention for water. From there, they do the due diligence on the ground and in the

ground to make sure the school will not be sitting on an old land fill or hazardous materials. He emphasized that there was more constraint in an urban school district where land is more scarce and higher in cost as opposed to suburban school districts where developers may simply set aside land for schools. In terms of impacts on the community, his firm may look at not only the above items, but also the location of other facilities such as adjoining parks.

In the interview with Brad Pfluger, he provided the researcher with a school site evaluation form and an in-depth review of siting criteria that his firm uses. These documents can be found in Appendix C and Appendix D. The broad categories they use to evaluate a potential school site is size and usuable area, configuration and orientation, accessibility, safety and traffic flow, demolition, utilities to site, site preparation, drainage and protection from ground water, subsoil composition, easements and restrictions, zoning, amenities, environmental impact, impact of antiquities, and other miscellaneous site preparation costs. Typically, when Mr. Pfluger's firm goes through a preliminary analysis of school siting, they will sketch a school out on a potential property to show the client how the various elements of the school facility might fit on the location.

According to Mr. Pfluger, a school district may come to them with three to four school sites, and his firm will use the evaluation criteria spreadsheet to rank each category for each potential location. Other factors that the school district will consider are the cost of land, whether a developer will donate a piece of land, and whether the land is located within the appropriate area of the district. When asked about other potential impacts on the community, he admitted that the form was more of a starting place in

"what it will take to develop the site", and each school district is different in terms of their specific needs and goals. However, he said that usually a school will address issues such as walkability and the potential for joint uses.

Based on Randy Fromberg's experience, school districts may already have a school site selected or use a program manager to help with this. However, his firm relies mostly on their civil engineering consultant to look at utilities, road access, and other infrastructure needs for a potential site. Mr. Fromberg finds that the most important issues to consider in terms of school siting are on-site and off-site infrastructure. In relation to the types of impacts on the community, he said that for his type of clientale (small and rural school districts), after school and weekend use of the library, gym, auditorium, and sometimes the cafeteria is very important for a school facility. In the design of such a facility, they have to keep security issues in mind so that the people that use the facilities after hours are segregated away from the rest of the school.

In Arnold Oates' experience, Texas School Planning may help a school district understand the size that a school site needs to be and will recommend what to look for, but he said "that really is more of an architectural function." In the end, he recommends that school districts work with the architects, because they will be the ones designing the building for the site. In general, he considers the most important issues for school siting are the size of the potential school site and the location of it based on where the student population is. His firm works with The Omega Group to provide a GIS software extension called "School Planner" to help draw school boundaries and show where the students are. Other criteria he thinks that need to be considered are the utilities, traffic

considerations, the locations of the buildings, the existence of floodplains, and whether there is enough space for playfields.

According to Trey Schneider with PBK, “there are some school districts that will just go and buy a piece of property and they just say ‘here’s this tract of land.’ We want you to build a school on it.” School districts may spend money thinking a property is cheap, but fail to realize that the cost of building a school on it may far exceed the cost of obtaining land in another area with adequate infrastructure or other site conditions. In April of 2007, Mr. Schneider gave a presentation on this very topic entitled “Evaluating the True Costs of Land for School Services.” The notes from that presentation are provided in Appendix E. Mr. Schneider said that PBK will evaluate potential school sites for free for “business development” purposes. Like Pfluger Architects Associates, PBK also has a school site evaluation form that they utilize. That form can be found in Appendix F. In general, the criteria that PBK uses in evaluating potential sites are the location, access to the property, environmental impacts, topography of the site, site clearing, demolition, the existence of water, sanitary sewer, electrical service, natural gas service, and the drainage of a site. However, being a civil engineer, Mr. Schneider thinks that the most important issues in selecting a school site is the water, sanitary sewer, drainage, and transportation infrastructure.

Mr. Schneider feels that the school district’s goal is to have a piece of land in a specific location or area that is based on the growth areas. His role, as the engineer, is to look at a tract of land and figure out “how viable it is to build a school on.” PBK prepares preliminary estimates so that the school district can “roll that into the price.” Mr.

Schneider wants the school districts to forget how much the school building costs, because the “cost of the building is pretty much the same in any given region”, and the most expensive factors are providing all of the important infrastructure needs to the actual site. As far as other community impacts, Mr. Schneider said that a school district typically takes into consideration community impacts themselves. He finds that generally school districts “would prefer to build a school as close to the development as possible. A lot of times, however, it is not available.” As far as PBK is concerned, they are evaluating sites based on how “developable it is” and leaves other important factors up to the school district.

In Kenneth English’s situation, DMJM Management works primarily with Houston ISD. According to him, HISD has a real estate department whose responsibility it is to procure sites, but DMJM Management will work with the selected design team in doing site analysis. In relation to school siting, “demographics and neighborhoods for elementary schools are number one.” Also, according to Mr. English, the availability of land is also an important issue. In an urban district, there is not much vacant land. As an example, for Houston ISD, DMJM had one school project that was a relocation to another site, which required the consolidation of 14 different tracts of land. Also, in situations in Houston ISD where older school facilities have to be replaced, the fact that the existing school site was so large was helpful in just rebuilding the school onsite and tearing down the older one. In regard to impacts on the community, Mr. English finds that it is important to look at how the children will get to school and the use of adjacent properties.

In Robert Gadbois’ situation, he feels that the selection of school sites is primarily

driven by geographic location or the area in which the school district needs the facility in. Once that general area is defined, then his firm may look at everything from available utilities, contiguous streets, site topography, soil conditions, environmental conditions, drainage, and work with whatever governmental jurisdiction is involved. In terms of community impacts, his firm looks at school siting in relation to accessibility and the convenience for the community as it develops around the school. However, he expressed that "with any school district, I think everyone would prefer to have or develop their school system based on a neighborhood concept, particularly for elementary schools." Another interesting point that Mr. Gadbois mentions about school siting is the following:

> A lot of times, when you work in growing school districts, you aren't actually working in a municipality – you are working in some city's ETJ. And so, who actually has ultimate authority over drainage and utilities is sometimes a challenge, especially working around the Austin area.

From a demographer's point of view, it is not surprising that Rocky Gardiner believes that the population and the location of students is the most import issue to consider when school siting. Besides that, he feels that it is important to locate elementary schools in neighborhoods, so young children will not be in high traffic areas.

As a contractor, George Pontikes is not involved in the site selection of schools, but he offers some insightful points on the planning process based on his experience working with the four largest school districts in Texas, which he stated included Houston ISD, Dallas ISD, Cypress-Fairbanks ISD, and North Side ISD. He explained that school districts "are not only looking at where they think the growth is going, but where they can get good land, free land, cheap land, utilities, infrastructure. In addition, he expressed that "school districts have to go through the same permitting and engineering issues that we

do, and the county can be tough."

EXTENT OF INVOLVEMENT WITH OTHER ORGANIZATIONS

In the interviews, all consultants were asked about their extent of involvement with other organizations such as state agencies, local governments, and the general public. This question was divided into two parts including their coordination with other governmental authorities or for the facilitation of public involvement on the district's behalf. This input was necessary to explore the degree of involvement with the school districts and how they may act as mediators between various realms. They had similar inputs, but also some different anecdotal comments. In general, they do act on a school district's behalf to address technical issues of submitting permits and applications and as a supporting role in answering technical questions in a public involvement process.

Coordination with other Governmental Authorities on District's Behalf

In terms of coordination with other governmental authorities for facilities planning, Barry Canning's firm does assist with things such as site plan submittals including platting, placement of buildings, locations of utilities, elevations, as well as any zoning or land development changes. Usually they work directly with the city when it comes down to the actual approval process, but they ask that the school district be involved with that, especially before planning commission or city council meetings.

In Craig Reynold's experience, zoning is just one of the "many different interfaces" of coordinating with a city. Since his firm, BRW Architects, works frequently with Dallas ISD, they often times have to go through the rezoning and consolidation of

many different properties at once in order to put together a school site with enough acreage. In doing so, they have to communicate periodically with the City of Dallas. He especially likes the City putting together a "development committee" with are representatives from planning, public works, building inspections, fire marshal's office, streets and sanitation, etc., so that he can "present the work to everyone in one room at one time." During these meetings, representatives from the facilities department of Dallas ISD are also a part of the discussion.

According to Brad Pfluger, his firm often works with the school districts and cities for permitting processes and to get roadways and utilities to a particular site. In many cases, school sites are located in areas where there are no roads, utilities, or infrastructure, so they have to work with developers in coordinating solutions. Pfluger Architects will go with administrators to meetings such as development committee meetings, but in general, he believes that it is "better for the owner to be there to make judgment call decisions" and "if it relates to architecture, then we can help guide them with those answers."

Just like the other architects, Randy Fromberg's firm also works on the school district's behalf to submit permits and applications. From a logistical standpoint, he considers their position as the consultant very important. He also explained that there are regulatory agencies at state and local levels including building permits from the city, fire protection requirements, county health department reviews, local utilities, state highway involvement, and sometimes the state fire marshal. If there are propane tanks present, the Texas Railroad Commission is also involved.

According to Trey Schneider at PBK, there are state and federal regulations that go into a design of a school and "everyone needs to be up on those regulations." Classrooms have to be a certain size for a maximum amount of students and there are specialty rooms that have to be a certain size. In general, when PBK approaches a new project, they want to visit all of the reviewing agencies to address issues such as building codes, landscaping, setbacks, platting properties, development permits, health and safety requirements, fire protections, accessibility standards, drainage, utilities, infrastructure requirements, and other such regulations.

As mentioned previously, Trey Schneider also finds it particularly helpful for a city to have a development review committee in order to have everyone from all departments at the table in order to go through all requirements. Overall, most school districts want PBK to interface with all of these regulatory agencies to get a project approved. In most cases, the administration will come to the meetings, but will not go unless the consultant can be there. However, sometimes PBK will go to development review committee meetings on the school district's behalf. Also, the consultants are the ones that are usually asking and answering questions.

Following up on this discussion, Trey Schneider also discussed the issue of some school districts using program managers. He finds that they are not necessary in some school districts that use them, because most architects are well qualified to help the school district oversee the construction and bond program. In particular, he described the situation as "not allowing the fox in the hen house." In his experience, all of the bigger architectural firms actually function as program managers. PBK is not a program

manager, per say, but PBK is very knowledgeable and does that type of work anyway.

According to Rocky Gardiner, Templeton Demographics sometimes presents to a city council a school district's demographic study. However, it typically depends on what a school district needs, and Templeton Demographics is flexible in helping school districts with their needs. Sometimes, Mr. Gardiner also receives calls from other jurisdictions and people to verify demographic information. He finds that it is helpful when cities have joint city council and school district meetings periodically such as Pflugerville or Austin. In general, he finds that cities have always been helpful with providing data or other information. However, sometimes cities do not like having to deal with consultants. But Mr. Gardiner feels that if they are helpful with him, he will at least return the favor and send them back data or "cleanup shape files (GIS files)" that were better than what they had.

In Arnold Oates' situation, he mainly works with architecture firms and school district staff to do general planning for school districts. Overall, he is involved with professional organizations that do facility planning, such as CEFPI, which he describes as the "premier planning group for facility planning."

In Kenneth English's experience as being a program manager at DMJM Management, his firm usually acts as the "first owner contact" for school districts. Specifically he said, "We represent the school district. So, as representatives, we deal with the different governmental entities." They communicate directly with other organizations, but there is a limit to their authority; for instance, they cannot commit the district legally or financially to anything. DMJM can sign some documents as agents of

the district, but the district has to sign other documents directly. In relation to Houston ISD, the school district has five different program managers or companies overseeing their bond program (as of 2007). From the inside, HISD has a school district employed project manager that works with each outside program manager, and that employee has the authority to sign legal papers to approve the spending of money.

According to Robert Gadbois, Owners Building Resource, also works as the owner's agents to coordinate with other entities. He said, "Over the years we have tried to develop good, working relationships and open lines of communication with all of the authorities within the areas that we work." According to Mr. Gadbois, the process begins locally with the city, city building official, city manager and many times, the director of utilities. They also work with counties, and in some cases, they work with the State for specific issues. Each district can be different, and Mr. Gadbois described his firm as having comprehensive services, but also working with "districts on a limited basis to complement the resources they may have in-house."

From a contractor's position, George Pontikes' firm Satterfield and Pontikes Constructions is only involved with other governing bodies in so far as the permitting of construction and buildings. However, Mr. Pontikes said that "they are going to be doing the same thing if the school district was a private developer. They are going to argue that their project is more important than anyone else and receive preferential treatment in order to start construction." Furthermore, he also said that his firm is "probably not licensed or committed to speak for the client."

Facilitation of Public Involvement

According to Barry Canning, the general public involvement for school planning is largely associated with pre-bond voting activities. The school districts set up community meetings to explain the details of a particular bond issue and to provide a forum for community input. WRA Architects is usually "heavily involved in those meetings" but they would prefer that the school district also be "heavily involved in planning meetings as well, so that they can speak for their own interest." Usually, a school district administrator leads meetings and the architects are available for technical questions that the school district cannot answer.

In Craig Reynolds' situation, BRW Architects is somewhat different than WRA Architects, in that BRW Architects may often lead the public involvement in order to "take the brunt" for the school administration. They are involved with public participation in all stages including pre-bond planning and design. The school district administration and community are more involved in the pre-bond planning stages, while the architect is more involved in the design aspects. As mentioned in previous sections, Craig Reynolds already participates in the bond planning committees for Dallas ISD on his own outside time, so in that regard, he is regularly involved in town hall meetings and talking with the community.

When asked about his firm's involvement in public facilitation, Brad Pfluger replied as follows:

> We will do that quite a bit in the master planning stage. We will bring community stakeholders, people from the business side of community, maybe the city people who are involved with the project, and sometimes facilitate discussion on what the school district feels like they need, and receive input on what the community

will support.

Broadly speaking, each school district is different in the approach they want to take in organizing for public participation. Some school districts organize all communication or meetings, while others have consultants organize the public involvement. In most cases, however, Mr. Pfluger said that the majority of school districts are the organizers of meetings. In Austin ISD's situation, the school district may invite Pfluger Associates to attend meetings and are only involved if people have questions that AISD cannot answer.

Just like all of the other architects' experiences, Randy Fromberg said that the facilitation of public involvement varies from district to district. Sometimes, Fromberg Associates helps school districts structure the whole process, but normally they just act as technical support. As he mentioned, "We will attend public meetings and help the school explain what the project is, what the benefit to the community is, how much money they are going to spend on the project." Also, in a support capacity, they provide graphics and help with brochures. However, most large school districts have their own in-house capabilities or may hire outside marketing firms to help the community task force promote the bond. (In the State of Texas, it is illegal for a school district to promote their bond program.) This may also be a role that the program managers take a large part in as well. In general, Mr. Fromberg thinks that an architecture firm should not be a leader in public meetings, because the "public perception is that the architect has something to gain from the passage of a bond, and will have a biased opinion." So, in his opinion, it is best for a local community leader to be the person in charge and the person in front in the process.

According to Trey Schneider, PBK may also help plan for public involvement. If a school district has never run a public process before, it may ask for assistance from PBK, and PBK in turn can make suggestions. The larger school districts generally know how to handle these situations, but smaller school districts may have had little exposure to public involvement processes. In general, most of the public involvement is in the bond planning stages, and school districts will have "town hall" type meetings. PBK will come to those meetings to act more in a support role for technical questions regarding land and facilities. Sometimes, the school district would prefer for PBK to "run the meeting," but it all "depends on how comfortable the administration is." PBK also has a separate communications staff that can do the entire bond planning in terms of exhibits, websites, presentations, and other advertisements. In addition, according to Mr. Schneider, PBK has a large "field department" that most other firms do not have, and "they literally live out of their truck and [or] car."

From a demographic firm's position, Templeton Demographics sometimes moderates public meetings or at least attends meetings for a boundary planning process. In these situations, Rocky Gardiner's firm can use GIS software to show how they create boundaries based on specific variables and inputs. People can make suggestions on changing a boundary and Mr. Gardiner can input that data into the software, which will "on the fly" produce a slightly new boundary. In doing so, Templeton Demographics "can take the heat from the district" and the emotion out of the process in order to show "that there is no gerrymandering going on." In general, Mr. Gardiner feels that the school districts try to do their best to accommodate everyone's needs, but that in the end,

"everyone's got their own agenda." In consequence, boundary planning meetings can be full of tension when parents' children's interests are involved. However, he has dealt with some processes where "some districts just go to the superintendent's office and don't have any public involvement…and it works somehow." In terms of marketing, they do not advertise for the district because they try to remain unbiased, so that their "numbers do not come into suspect."

In Arnold Oates' situation, the public participatory process is "one of the major things" they do. Depending on the school district, he can be the main facilitator in public meetings. His firm does most of the public planning process and prepares agendas for meetings. In general, he describes the pre-bond planning process working like this: A community task force is appointed by school board members. Each school board member nominates three or four people, and the superintendent or board president reviews that list and make decisions on the membership of the committee. This membership should be broad and diverse and represent key stakeholders and leaders in the community including all ethnicities, ages, and a balance of genders. Also, if there have been some outspoken people that have been negative about supporting past bond issues, Dr. Oates believes that the school district should invite them to be involved as well.

Usually, Dr. Arnolds' firm helps the school district strategize in putting the committee together. This task force then takes recommendations back to the board for adopting recommendations. Once a bond issue is called, the school district walks a fine line and must be careful in just representing the facts, and not showing any bias. (A school district employee cannot even send an email on a school district computer to

promote a bond issue.) Dr. Oates often acts as a facilitator and the committee usually elects a chair person to be the spokesperson for the task force. He emphasized that he cannot be the spokesman for the group, and that there must be a citizen involved to lead the group in taking their recommendations to the board.

In general, Dr. Oates said that it typically takes six or eight meetings for a committee to come to some conclusion, and that it can sometimes be difficult for everyone to reach a consensus. He usually structures his meetings with smaller breakout sessions in order to give people the opportunity to provide more in-depth input. Each meeting is typically two to three hours in the evening, and he emphasized that he never lets the group leave separately. He always tries to bring back the smaller groups into a large group and reminds them that "they are not subcommittees, but a committee as a whole" and they must reach some type of consensus.

In Kenneth English's situation, DMJM Management also participates in public involvement within Houston ISD. However, HISD already has another company hired that actually handles the public relations with community groups such as advertisements for meetings, planning for community meetings, and organizing ground breakings and school dedications. An interesting insight he brings up is that the company that handles the public relations aspect for HISD is actually a former school board member. So, she is intimately knowledgeable of the school district, which subsequently "can be an advantage."

According to Robert Gadbois, Owners Building Resource will "engage the community extensively." They work with the school district to develop community

outreach and a course for action. As an example, he talked about a recent masterplan that his firm was working on. They had already done the technical work in surveying the campuses and meeting with various district administrators to identify and prioritize needs. With the technical data out of the way, Mr. Gadbois asked the school board to identify names of people in the community to create a facilities task force, so that he could then "share that data and help them understand the challenges the district is facing and get their input on potential solutions."

For George Pontikes, his contracting firm may on occasion be involved with public relations. However, it varies from district to district and in what type of position they are in. If a district is trying to pass a bond, then his firm may travel and visit with the parent/teacher organization or the steering committee for the bond in order to answer technical questions that many "taxpayers" may have. In general, he commented that "it is not unusual at all" for them to be called upon to take questions from the public.

UNDERSTANDING OF THE SCHOOL FACILITY PLANNING PROCESS

Perhaps one of the most intriguing questions asked was regarding what interview participants feel that school districts, local governments, state agencies, the general public or other organizations may not understand about school facility planning. Because they are school facility planning consultants, their responses are perhaps more biased towards a school districts point of view. In general, their responses regarding the lack of understanding about school facility planning revolved around the general public, school districts themselves, local governments, and state governments.

General Public

According to Barry Canning, the biggest issue concerning the public is the overall lack of understanding in regard to the school facility planning process and the time it takes in developing a plan, getting a school project opened, and the budget needed for everything. He finds that "sometimes community members feel that they should be getting a lot more than what they are able to with funds that are available."

Craig Reynolds feels that the public does not understand how the design of the school can drastically impact the "educational quality" or "educational experience". Although there have been many studies, most people do not seem to grasp these issues. In many cases, people are just looking at the "bottom dollar", and there are numerous objectives that must be achieved with school buildings. However, in the situation of Dallas, he was actually inspired by the way the public had been receptive to the 2002 bond. According to Mr. Reynolds, 90 percent of the people that vote in Dallas do not have school age children or children in public schools, but yet of the people who voted, 80% voted for the bond. During that time, the bond package was the largest one ever passed in the State of Texas for any municipality or school district. In this instance, Mr. Reynolds feels that the public understood that education was important for Dallas to enhance "the quality of life for the entire city" in order to have a "world class city."

Randy Fromberg stated the following related to the general public:

> Most of the public has no idea what we do. In general, they understand that there is an owner, an architect, and a contractor. All three are separate and unique and have their own responsibilities, but yet they all work together. Also, the public has no idea how early the architect is involved in the process. They think the architect magically draws up plans and the school is built, but there is a lot of work that happens before there are any drawings drawn.

According to Arnold Oates, the general public does not understand the requirements that the State mandates on school districts. However, that is where the community task force comes in. The community task force is there for the consultants and school districts to explain the process, and once they do understand it, then they are usually good about supporting the needs of the community. Overall, he believes that most citizens "want what's best for the kids, and they will work hard to do that."

From a demographer's perspective, Rocky Gardiner takes issue with the general public expecting sometimes too much out of demographic studies. He stated that demography is "not an exact science" and sometimes a demographer can be treated "almost like the weather man." Templeton Demographics can make an educated research forecast, and if they "miss it", then it is not because they did not do their job, but because the "developer that was going to build a thousand homes didn't build them." In general, he said that his firm is "pretty thick-skinned", and the school districts understand these issues, but the general public "look at it personally."

As George Pontikes explained, "The voting public likes to throw their weight around." He finds that there is a general perception that when something is wrong, it must be the contractor's fault. "It sure can't be the A/E team, because they have had the opportunity to schmooze these guys for a long time." Specifically, he believes that the "public as a rule doesn't understand the contractual relationships that their contractors have with the community."

School Districts

In Randy Fromberg's experience, schools boards and administrators are required

to have some training in school facility planning. However, school board members, especially if they have never served on a school board or if they are within smaller districts, have no idea what the process involves. He said that “often they really have to be educated as the process evolves. So, that is a big part of our job.” In general, he finds that either their client group has complete confidence in them and trusts their decisions or they have to train them and explain everything that they do. But usually, it is somewhere in between.

According to Robert Gadbois, the challenge with school districts, even those with an internal construction group, is that “9 times out of 10, the people in charge have had no practical experience in the planning, designing, and construction of school buildings.” According to him, the people work their way in the administrative ranks via teaching and ultimately find themselves in an administrative position responsible for technical issues that they really have no skill to effectively manage. And in the end, a school district may find itself in a position where they did not plan well for a bond program.

Local Governments

Barry Canning said he has no problem with cities and counties as long as they provide building codes and planning requirements in writing. As an example, larger cities post codes and amendments online, while “rural communities sometimes kind of fly by the seat of their pants.” For smaller communities, a new school can be one of the newest types of structures in the area, and they might not have the tools or basic understanding of what generally is done.

According to Randy Fromberg, the architect understands the standards much

better than the people enforcing the standards. This is evident not only in small towns, but also in larger cities such as Austin. Because of this, he finds that he sometimes gets some "wild interpretations" and "it creates a situation where they have to go in and negotiate a solution." In small communities, Mr. Fromberg said, "A lot of times there is no planning commission or no code enforcer. It is a lot of times a city manager or someone that they default this role to such as a plumbing inspector."

In the interview with Trey Schneider, he had very strong feelings regarding the relationships between cities and school districts. He said that cities and counties should not treat school districts like developers. According to him, "school districts are not looking to grow bigger. Their job is to educate the kids within their district. So, they're reacting to the economic growth of a community or an area." Specifically, he said the following:

> Cities were created to provide police protection, fire protection, and to provide transportation, drainage, water, and wastewater (and in some cases, electricity and natural gas). The counties are there to provide drainage, roads, some oversee rural water systems, some have county fire, and emergency services. The city (or economic development corporation) is usually promoting their city. Why are they asking the school district to provide certain services for that school? Why would they do that if they are the ones bringing the people in? The taxpayers are basically one and the same. There are political processes involved. School districts are not created to be in the road and drainage business. Now granted, they hire us to do it, but it is a burden.

In general, Trey Schneider said that when he started in the engineering business 20 years ago, counties and cities would usually extend services out to new school sites. Overall, he would be happy if the infrastructure was planned properly and in coordination with the school districts. However, sometimes a developer may simply make deals with school districts to extend certain services. He usually tries to tell school districts to just

assume that they will have to provide for extra services, and to "roll it into the bond issue." In the end, Mr. Schneider admitted, that perhaps "maybe cities and counties see themselves as just overseers." Also he finds that "school districts need to move faster than what they can get through the city's normal process. The city won't always allow that and it hampers them." He feels that cities do not necessarily understand the timing concerns and that "school starts in August. It must be finished."

According to Kenneth English, typically governmental entities do not always "play well together." Cities and school districts sometimes look at each other as competing entities for taxes and for space. Cities sometimes do not acknowledge that schools can be assets in their neighborhoods, and this lack of coordination becomes more evident in the building permit processes. In general, Kenneth English said, "There typically is not a spirit of collaboration between governmental entities, at least the ones I have worked with in Texas." Because of this, he believes that "cities and school districts need to work harder to collaborate with one another, because it is to both of their benefit."

Based on Robert Gadbois' experience, he explained that "municipalities, counties, and in some cases, even the State, don't recognize that school districts work on a fixed calendar." By the beginning of August, children have to go to school in a building, and it "isn't like a grocery store, restaurant, or office building. School HAS to start!" He finds that in places like Austin, where the "bureaucracy is so muddled", the school district cannot get effective review of plans or specifications to meet their deadlines. In most cities, he said that "they have no sensitivity to the time constraints that we operate

under."

As a general contractor, George Pontikes feels that cities "do a pretty good job….and they aren't going to change protocol." He finds that "they are fairly independent and they push pretty hard."

States

In Barry Canning's opinion, state agencies are important for establishing guidelines for educational adequacy standards, but he is concerned with the layers of bureaucracy and them slowing down the development process. He said that Texas does have rules and guidelines for the development of schools, but it does not need to be "needlessly cumbersome" As an example, he explained that California is more of an extreme case in that it can take a year sometimes to even start construction once the drawings have been submitted.

From Brad Pfluger's perspective, states do not understand that "every school district is unique", and that there are many different states that try to enact legislation or put requirements on school districts that are not appropriate in all situations. An example of this is when some states try to require school districts to utilize one design prototype for a school building in order to save money. This is not always appropriate because school facilities must be designed to meet the community needs. In general, Mr. Pfluger considers it important for each district to decide what is important for them in order to fulfill their educational program.

According to Arnold Oates, there is a general lack of understanding about the cost of construction and that the inflation for construction is much greater than the overall

inflation rate for other goods and services. He thinks that the State of Texas should be funding school facilities more than they have, because there is a limited bonding capacity based on the wealth that each school district has. Across the board, all school districts are not equal in their resources and the amount of wealth they possess, and certain districts may have better quality facilities.

LOCAL GOVERNMENT AND SCHOOL DISTRICT PARTNERSHIPS

The dialogue of the understanding that other organizations may not understand about school facility planning led to more focus on school district and local government relationships. As mentioned in the literature, there can be many benefits for both entities when they partner together on common initiatives and have better communication in school planning. The consultants had various opinions on the state of local government and school district partnerships. Some had seen successful partnerships, and some said they had not. Many of them expressed that local government entities are important as regulatory reviewing agencies. Overall, they offered much insight into their experiences with the two public entities.

In Barry Canning's opinion, other governmental entities are present to review and enforce life, safety, and welfare issues. In regard to school facility planning, he feels that local governments are there to review plans, but are not part of the planning or decision-making process. However, that is not to say there cannot be partnerships between entities. In his experience, it is not unusual to see "friction" between a city and a school district. Mr. Canning believes that there are varying levels of relationship types, but in particular,

he thinks that Plano and Mesquite have good relationships between their cities and school districts. For example, he cited how Mesquite ISD may purchase properties large enough to share a portion of it for a municipal park. In Plano's situation, the City of Plano and Plano ISD have a good working relationship and will occasionally reach certain agreements for joint-use facilities. He especially gave praise to Plano ISD's district architect and described him as a "topnotch guy" that understands the school facility process well.

According to Craig Reynolds, city planning departments do not take into consideration how schools may impact the development of a city. He finds that the school planning process is particularly difficult in an urban setting like Dallas where the population shifts dramatically, and is therefore difficult to plan where schools need to go. He thinks that the cities do not consider where the school children are attending school, but rather "consider that the school district's problem". He feels that "if you are really doing city planning, you need to be thinking about that." He has found that Dallas ISD and the City of Dallas have at least partnered more in the last bond program with three or four projects that involved either joint-use facilities or co-located parks. Also, in relation to other entities, the local hospital district in Dallas, Parkland Hospital, often has satellite health clinics in some of the high schools.

Just like Barry Canning, Brad Pfluger believes that local governments are there to provide regulatory guidance. In terms of successful local government and school district partnerships, he feels that there are many instances in San Antonio such as Ronald Reagan High School which also houses a community library. In Austin, he cited the

example of the J.J. Pickle Elementary School in the St. John neighborhood as a successful partnership between the City of Austin and Austin ISD, which includes a school, public library, public recreational center, and a satellite police station and health clinic. Also, in Austin, his firm designed the Gus Garcia Middle School which recently opened last year and includes a joint recreational tennis facility between the school and the community. In general, though, he thinks that school districts often open their facilities and outside fields for formal and informal community uses, outside of any city and school district partnerships.

According to Randy Fromberg, "any local or state agency that provides a service needs to be involved – whether that is utilities, or architecture, or whatever" in the school facility planning process. In relation to Texas, he said, "It is a real love/hate relationship between school districts and cities, and I think that is just the nature of Texas politics." In particular, he stated that a "city has a responsibility to provide infrastructure and common services; but the school district has a lot more money, so that causes conflict, especially if the schools have some needs that the city should be providing for them."

When asked about successful partnerships that he had seen, Mr. Fromberg took a while to answer the question. But in the end, he cited the example of the City of Burnet and Burnet ISD, as a small community that know each other, work well together, and can negotiate solutions. He finds that the one local high school is used extensively for community events and is "really the backbone of that community." As another example, in the community of Natalia near San Antonio, the mayor is a teacher in the school district and the maintenance director for the school district is on the city council. He

believes that “it is all about the informal relationships”, and “in a small community, there are so many people who are willing to lead.” Overall, he stated that “in any relationship, whether it is between people or organizations, you have to have give and take, and you have to have negotiations.”

According to Trey Schneider, school district and local government communication is very important. Specifically, he said that “the fastest a school district can put an elementary school on the ground is two years and a high school is about three years. If someone is going to dump a thousand homes in an area, that is going to bring a lot of small or school age kids. They have to figure out a way to handle that growth.” In terms of school planning, he expressed that “regulatory agencies are only needed when they start targeting properties and specific projects. They can’t answer specific questions until then. Unless, there are certain areas that the city wants to restrict any schools going in a certain area.” In addition, Mr. Schneider said that he has heard of cities saying to school districts that it would be more helpful if a school district would come in and talk to them before they purchase a property. Mr. Schneider thinks this would be helpful as well, and he feels that PBK “sort of does that for them.”

When asked about successful local government and school district partnerships, Mr. Schneider expressed, “In most cases, the school districts and the cities don’t get along well.” According to him, school districts can go wherever they want to go. Zoning does not affect schools, but they do need to comply with planning standards. In doing so, there can much tension between the two governmental entities. He citied the example of the Stafford Municipal School District as an anomaly in the State of Texas and perhaps

the only true city and school district partnership. In regard to counties, Mr. Schneider finds that school districts have a better relationship with the county commissioners, and that they seem to be more helpful with extending services to school districts.

According to Arnold Oates, “School districts are independent political entities, but there needs to be coordination with the cities, and then you need to coordinate your planning with the city to make sure that what you are doing is in the best interest of the total community. Policy wise, the city has no jurisdiction.” Also, all buildings in Texas have to comply with international building codes anyway, but “the way you interpret the rules can cause conflict between the school districts and cities. Those are just political issues that you have to work out.” In terms of successful partnerships, he also cited the Stafford Municipal School District as being a special circumstance in the State of Texas, in that the city council has ultimate control over the school system. He also pointed out, from his experience as a superintendent in both Texas and Virginia, that the Commonwealth of Virginia has school districts that are either “city school districts” or “county school districts.” In other words, school districts are either coterminous with the counties or the cities, and they operate within the same government.

When asked about successful school district and local government partnerships, Rocky Gardiner expressed that he was not sure if had seen it or “come across it.” In general, he expressed that “the biggest issue between local governments and school districts is getting the necessary infrastructure out to the schools.” In general, he said that cities that are impacted by schools should be involved and that decisions could be made jointly.

According to Kenneth English, “cities should be somewhat involved” in the school facility planning process. As far as successful partnerships, he stated that the City of Sugarland works closely with Fort Bend ISD, but “mainly because the City knows that good schools are an asset and will help the City grow. The School District wants to be in the middle of those neighborhoods.” In general, he makes an interesting point that when one looks at other school districts besides “big urban districts”, then a person may see more collaboration in mid-sized towns or suburban areas, because it becomes more important to those places to attract growth and have good schools. In so far as urban school districts like Houston ISD, he finds that the partnerships exist at the individual school level and not at the overall district level. He finds that individual schools often partner with community organizations or businesses, because some schools have to finance their own initiatives above and beyond what the school district can provide them.

Based on Robert Gadbois’ experience, school districts and local governments do not work well. Specifically, he expressed, “There are very few examples where a city and a school district are a perfect match. Typically, the school district outgrows the city or has geographically extended beyond the city.” This problem becomes very apparent during the planning process. For example, in his experience working as the program manager for Manor ISD, the school district is growing more than the City of Manor, and “the City simply doesn’t have the tax base to fund the infrastructure improvements that the school district needs to support its facilities. So, in many cases, the School District ends up fronting the money for water, sewer, streets, and drainage to get their facility open.” However, he does feel that, “if you are looking at it from an urban planning

standpoint, a city has to consider their school district and how that plays into their comprehensive plan, just like they would industrial, residential, multi-family - everything." However, he expressed that "a school district in many cases is trying to be responsive to growth in specific pockets – some within and some exterior to a municipal jurisdiction."

Moreover, Mr. Gadbois stated that "in terms of recognizing the limitations you are going to face as a program manager and owner's agent in going into any specific municipality, it helps me to try to know and anticipate any potential pitfalls." In that context, his firm has tried to develop good working relationships with many of the entities. However, in most cases, even when they have good working relationships with certain individuals in the agencies, "the agencies *themselves* don't have the internal relationships to foster a better relationship."

In George Pontikes' experience as a general contractor, he thinks that local governments should be involved "in the planning as it relates to the approvals." In particular, he stated that "some jurisdictional authorities are great and help you – and they are pro growth and pro schools…some treat a school just like they treat a grocery store." In relation to successful school district and local government relationships, he believes that Goose Creek ISD and the City of Baytown have a "tremendous relationship." In describing their relationship, Mr. Pontikes stated, "I have worked there for 10 years. They have a good relationship – better than most. What it leads to is plan review - expediting it. It has to do with taking a pragmatic approach towards substantial completion. It makes for a good place."

CHAPTER 5 – CONCLUSION

This chapter reviews key findings and offers final conclusions from the background information and interviews with school facility planning consultants. It also provides study limitations and future research on this subject area.

KEY FINDINGS

The following subsections offer key findings on the importance of school facility planning, the overall school facility planning process and how consultants fit into this process, school siting considerations, the extent of consultant involvement with the general public and other organizations, the understanding of the school facility planning process, and school district and local government collaboration.

Importance of School Facility Planning

Interview participants felt that school facility planning is important because the planning and design of schools impacts the quality of the learning environment, schools act as centers of communities, and it is important to plan for the effective utilization and efficient use of public facilities. Based on various studies and through their experiences, consultants emphasized how their work impacts the quality of education. For example, the design and layout of a classroom can affect teaching strategies and learning styles. Also, the maintenance and condition of facilities may inspire children or make them feel that the community cares about their educational progress. Similarly, research shows that the condition of school facilities is an important social equity concern in the United

States. In general, schools in themselves act as centers for community activities such as sports practices or fine arts performances. Especially in rural areas, schools are major employers and draw people from large areas for community events. Other research emphasizes the importance of schools and integrating a community's needs into a school facility. Also, past research validates the significance of schools as an important economic consideration.

Because of the importance of schools, school planning and design professionals must be skilled and knowledgeable so that the public receives the best use of their tax dollars. According to some interviewees, balancing the needs of the school district with those of the children is difficult when some schools are underutilized and some are overcrowded. In these instances, school districts must redraw boundaries, build new schools, close obsolete schools, or expand some campuses. People do not want schools closed in their neighborhoods while others do not want schools underutilized. Furthermore, some interviewees felt that schools should be equitable across the whole district for all children. This means updating some facilities and rebuilding some schools altogether. In particular, research shows that school facilities are not equal across the country and low-income districts have fewer funds and have lower quality facilities.

In general, school districts must understand future growth and increases in student enrollments and plan accordingly. Also, they must think about long term needs as well as short term needs. An example of this, as one interviewee cited, is the use of portable buildings to expand classroom space. Past research emphasizes how certain areas of the nation are experiencing increases in student enrollments, which in turn lead

to increased expenditures on education and school facilities. Also, other research demonstrates that increases in school construction and maintenance costs have significantly affected schools across the nation as school districts battle with finding ways to fund facility improvements. This investment has the opportunity to positively affect future generations through the proper planning of schools in relation to the greater needs of communities. Therefore, school districts need the expertise of consultants to properly plan for school facilities.

The School Facility Planning Process

The school facility planning process is complex, and can be viewed in different phases of planning based on demographic analysis, pre-bond planning, facility assessments, community involvement, architectural design, engineering, construction, and post construction. The CEFPI guide to school facility planning as well as other prominent texts on school facility planning follows these broad planning phases. Interview participants gave similar, yet slightly different accounts of the planning process based on their experiences or expertise and involvement in certain stages of the planning process.

In general, a school district must look periodically at the demographics of their district in order to anticipate future growth. Also, school districts must evaluate their facilities periodically to plan for maintenance and future expansions or renovations. Once a school district sees a need for facility improvements across a district, they usually hire one main consultant to undertake overall bond planning services. This typically is an architectural firm, but sometimes it can be a program manager that oversees all facility

improvements. It also depends on the school district's capacity to oversee construction and bond programs. The literature also emphasizes the use of one main consultant for facility planning, the use of consultants when school districts do not have the proper expertise, and the importance of the main consultant to have strong leadership skills and good group skills in order to manage all of the various aspects of school facility planning.

According to interviewees, architectural firms, when hired as the main consultant, take on many roles and services in the planning process. Some firms, like PBK, can be thought of as a "one stop shop" for school planning needs. They provide facilitation of community involvement, marketing or communication services, engineering, architecture, and construction management services. Many architectural firms, however, do not have all of these types of in-house capabilities and so may subcontract out work such as engineering services. Similarly, the way school districts contract out work depends on their needs and in-house capabilities. Depending on the type of contract, a school district may hire an architect to do everything from designing the whole bond package to just designing an individual school. In smaller districts, it is more common to use one consultant to design and plan all of the facilities. In contrast, larger districts typically hire multiple firms to carry out their bond program. In both cases, most consultants establish long-term relationships with their clients and are asked back for future projects.

Program managers, when hired as the main consultant, may subcontract out work for certain services. However, school districts usually contract directly with architecture firms, demographers, and contractors. The program managers are more important for

overall management purposes, pre-bond planning, facility assessments, and the facilitation of community involvement. Architecture firms may also take on these roles too. Program managers are especially important in cases where school districts do not have their own in-house capabilities or would rather hire a consultant on a temporary basis instead of having permanent employees. Both program managers interviewed emphasized their position as being the “owner’s agent.”

Demographers are usually hired out separately and some school districts have their own in-house capabilities. Demographers are especially important for analyzing population growth and decline and for projecting future enrollment levels in the district. These services are used to assess the need for redrawing school boundaries, closing schools, renovating schools, and constructing new schools in certain areas. They may also be involved with community outreach by being present at public meetings for boundary planning and assisting with technical questions.

Other consultants such as engineers may take on less active roles. Within the engineering field, civil engineers take on more important roles in evaluating sites for water, wastewater, drainage, roads, environmental conditions, and other important infrastructure considerations. Most engineers are hired as sub-consultants by architecture firms. However, some school planning firms, such as PBK, have their own in-house engineering team.

Because of the increasing costs of school construction, school districts bring contractors, like architects, earlier into the planning process to give insight into construction budgets. Contractors can offer a wealth of information in the pre-bond

planning process. The one contractor interviewed emphasized the importance of construction delivery services, and that new, “alternative” methods may be seen in the future, which provide for a more collaborative process in the overall planning, design, and construction of schools.

Overall, most consultants emphasized the importance of the involvement of the community into the overall process. In the end, they are the ones that have to vote on a bond issue and it is important that they understand everything involved. For the consultants, it is also important to understand the community and understand their needs and goals for educational programs. Committee task forces play a very important role as representatives of the community.

School Siting

Smart growth advocates recognize the significance of schools in contributing to community planning and for a sustainable future. According to the literature, smart growth schools should be compact in size, small, adjacent to or located within neighborhoods to provide children with alternative transportation options, make use of existing infrastructure such as historic schools, streets, parks, etc, and provide the community with use of the school after hours. The siting and location of schools have important implications for the community in terms of transportation, health, environmental factors, and from economical standpoints For instance, research shows that the location and quality of schools affect property values. Moreover, studies show that schools contribute to increased vehicle traffic when parents transport their children to school. Locating schools in close proximity to neighborhoods and providing for a safe

pedestrian or bicycling environment can increase the use of alternative modes of transportation. This results in decreases in vehicle miles traveled and positive impacts on air quality. Also, children walking or bicycling to schools results in more physical activity, which could aid in battling childhood obesity.

Consultants, such as architects and engineers, are especially important in helping school districts evaluate and assess potential school sites. A University of Texas survey found that consultants are influential in school district decisions regarding the design and location of school facility improvements. However, regardless of the background information emphasis on siting schools based on smart growth principles, interview participants generally expressed that the availability of land relative to the location of the student population, child safety considerations, the availability of utilities and infrastructure, environmental factors, as well as the cost of land, as being the most important issues in school siting.

The most significant criteria that school districts use, as determined by interview participants, is the availability of land relative to the location of the student population or high growth areas. The first thing that school districts do is determine where the student population is and look for available land based on this factor. Especially in urban school districts, this becomes a significant challenge when the cost of land is higher or in short supply. In these situations, urban school districts must assemble various pieces of land in order to put together a site large enough for a school facility. Also, student populations can change quickly in urban areas where the populations are highly mobile. In suburban areas, where a subdivision with 1,000 homes can sometimes appear to be built overnight,

schools have to react to the development and plan for a facility to be there to educate the children. In these instances, the “chicken and egg” scenario comes into question about whether the school districts produce the need or the developers cause the need. At least from the school district and school facility planning consultants’ point of view, the developers cause the need for new schools and they are just simply reacting to this. However, one has to question cases when school districts build schools where there are no existing houses.

Probably the second most important criteria for evaluating a school site is the availability of important infrastructure such as water, sewer, drainage, and proper roads. Also, environmental factors are important considerations such as topography, soil conditions, and the existence of flood plains, etc. Civil engineers are especially important in determining these factors for how “developable” a site is. This is true not only for school sites, but for any type of development. The consultants that provided a site selection evaluation form in the interviews had mostly factors relating to infrastructure and environmental factors included.

The cost of land is also an important factor. As mentioned previously, land costs are especially more expensive in built-up urban areas, and developers that donate land are very enticing to school districts on strict budgets. However, this usually only happens in suburban areas, where land is more available and new construction happens more often. As mentioned in the literature, home values reflect the existence of quality schools in the area. If a developer can put an elementary school in its subdivision, then it can potentially attract more buyers. However, school districts that work with developers in these

instances need to be careful about the type of land they are receiving. Often they can be some of the more undesirable land in the area that the developer does not want to build on anyway.

Another important factor mentioned in site selection criteria was safety considerations for children. This was especially relevant in terms of transportation circulation and separating vehicle and pedestrian pathways. Also, considering adjacent land uses and a community's use in the design of schools was also important. Impacts such as walkability, neighborhood schools, and joint use facilities seemed to take a "back seat" to the above considerations. Consultants are more concerned with the development aspects of the school sites. As one consultant pointed out, school districts try to take these things into consideration, but the availability of the land in the specific areas needed are the most important considerations in school siting.

Extent of Involvement with other Organizations

In general, consultants do act on a school district's behalf to address technical issues of submitting permits and applications and as a supporting role in answering technical questions in a public involvement process. Past literature emphasizes the value in utilizing quality consultants to work with the community and other governmental entities for school facility planning initiatives. Furthermore, one resource found that consultants were significant in terms of coordination with other governmental authorities and the facilitation of public involvement on a school district's behalf

Many consultants gave positive comments in regard to cities establishing "development review committees." They felt that it was particularly helpful to have every

regulatory department “at the table” to give comments all at once in order to expedite the review process. In these instances, consultants are present along with the school districts in order to assist with technical aspects. Also, consultants would prefer that school districts always be present in these meetings. Program managers are particularly important for interfacing with other governmental agencies, because they are the owner’s agent and often the “first owner contact” in those instances.

Overall, public involvement is largely associated with pre-bond planning activities. Each school district is different in how they approach public involvement, but for the most part, school districts usually plan for public meetings, and consultants may be very involved in addressing technical issues. Some firms, when asked by the school district, can facilitate meetings and provide communication materials such as graphics and brochures advertising meetings and public outreach events. However, most of the time, school administrators facilitate the public involvement process. In a committee task force meeting, usually there are citizen co-chairs that lead the meetings and speak for the committee. Consultants and administrators are there to support the community committee and their needs. School districts in Texas often walk a fine line and cannot promote a bond or hire other people to do it. That is why it is so important for the committees to understand the school district needs and provide public outreach opportunities to explain everything to the community.

Understanding of the School Facility Planning Process

For the most part, responses regarding the lack of understanding about the school facility planning process revolved around the general public, school districts themselves,

local governments, and state governments. In relation to the public, consultants mostly said that the public does not understand the whole process in general, the time it takes, the amount of money involved, state mandates and other regulations, and contractual relationships between the owners and other entities. For example, one interview participant cited that the public does not realize how early the architect is involved in the whole process and the amount of work that it takes to get from planning stages to design. In regard to school districts, interview participants felt that school board members, especially those in smaller school districts or those that have never served before, have little knowledge or understanding of the school facility planning process. Also, one consultant felt that some school administrators have little training or experience in school construction and planning and they often work their way up through previous teaching and administrative service. In relation to state governments, consultants felt that each school district is different and should be able to determine their own needs and tailor their facility improvement initiatives to meet those needs.

According to interview participants, local governments lacked understanding about the school planning and development process in general, the timing involved, and the important public service which school districts provide. For many smaller communities, a new school can be one of the newest types of structures in the area, and local governments might not have the tools or basic understanding of what generally is done. Some smaller communities do not have the necessary employees to deal with the complex development issues, and planning commissions may only meet monthly. Furthermore, some interview participants commented that, even in larger cities, the

consultants often understand the development processes better. In regard to timing, they felt that the development review process is too slow, and that schools are different than most types of development in that schools have to open at the beginning of a school year. When a school project is not on schedule, school districts are particularly in a bind to find alternative places for children to go to school.

Finally, interview participants disliked local governments treating school districts like other developers. As Trey Schneider described the situation, “School districts are not looking to grow bigger. Their job is to educate the kids within their district. So, they’re reacting to the economic growth of a community or an area.” Again, this is the common “chicken and egg” scenario that often comes up between local governments and school districts. School districts say that others cause the growth, and local governments may say that school districts unknowingly encourage growth by reacting too early. These issues are particularly problematic when local governments ask school districts to fund their own infrastructure to their school sites.

Local Government and School District Partnerships

Based on the literature, there are obvious connections between school and city planning, and both school districts and local governments can benefit from each other when they coordinate planning efforts. In most states, school districts are autonomous governments with their own taxing authority, and as such, have different goals and agendas. Like some states, Texas does not require school districts to adhere to local zoning codes. However, school districts do have to follow basic life, safety, and welfare requirements of local governments. From this end, school districts and cities often have

conflicts. Many consultants interviewed felt that local governments are necessary to review and enforce life, safety, and welfare issues, although a few argued that local governments should not be a part of the decision-making process. However, most interview participants recognized the value of local government and school district partnerships and that communication was important from both ends of the spectrum. As some interviewees cited, communication and coordination is particularly important in urban settings when planning for future schools is hampered by dramatic shifts in populations.

Based on the interviews with consultants, probably the largest conflict between local governments and school districts is the issue of school districts providing for basic infrastructure improvements. Both entities are government agencies and provide public services. As such, some school district consultants argued that local governments should extend or improve services for school sites. However, many smaller communities, as some interviewees recognized, have a lack of funds and simply cannot pay to extend or improve services. Another conflict between local governments and school districts, as found in the background information regarding the State of Texas and as cited by one interview participant, is the different extent of geographical boundaries. Often cities have to deal with more than several school districts, and school districts often have to deal with several different cities.

In general, some consultants had seen successful partnerships, while some said they had not. Based on the interviews, most partnerships in Texas seemed to involve joint-use facilities such as combined parks and playfields or joint libraries, auditoriums,

or recreational areas. Although, school districts often open their facilities and outside fields for formal and informal community uses, outside of any city and school district partnerships. According to the literature, some states have established formal agreements and processes for government coordination and communication. In contrast, many local government and school district partnerships in Texas do not involve formal agreements or processes for school facility planning.

Some interview participants mentioned that informal relationships between school districts and local governments work well when both parties are in mutual understanding of each other's issues. In the interviews, this seemed to be particularly relevant for small or rural communities where school district and local government staff or officials know each other better. Similarly, one consultant made an interesting point in that people may see more collaboration in mid-sized towns or suburban areas, because it is more important to those places to attract growth and have good schools.

Overall, research shows that best practices between local governments and school districts include open communication, data sharing, the establishment of shared visions, goals, and policies, and formalized agreements for communication and coordination. Although some school districts and local governments may not have formalized agreements or processes, as seen in the interviews, some communities have informal processes that work well for their circumstances. This is possible because the general public, school districts, and/or other governmental entities understand the importance of schools in communities and the complexities involved in planning for schools. To help overcome these complexities, private sector consultants are particularly important in

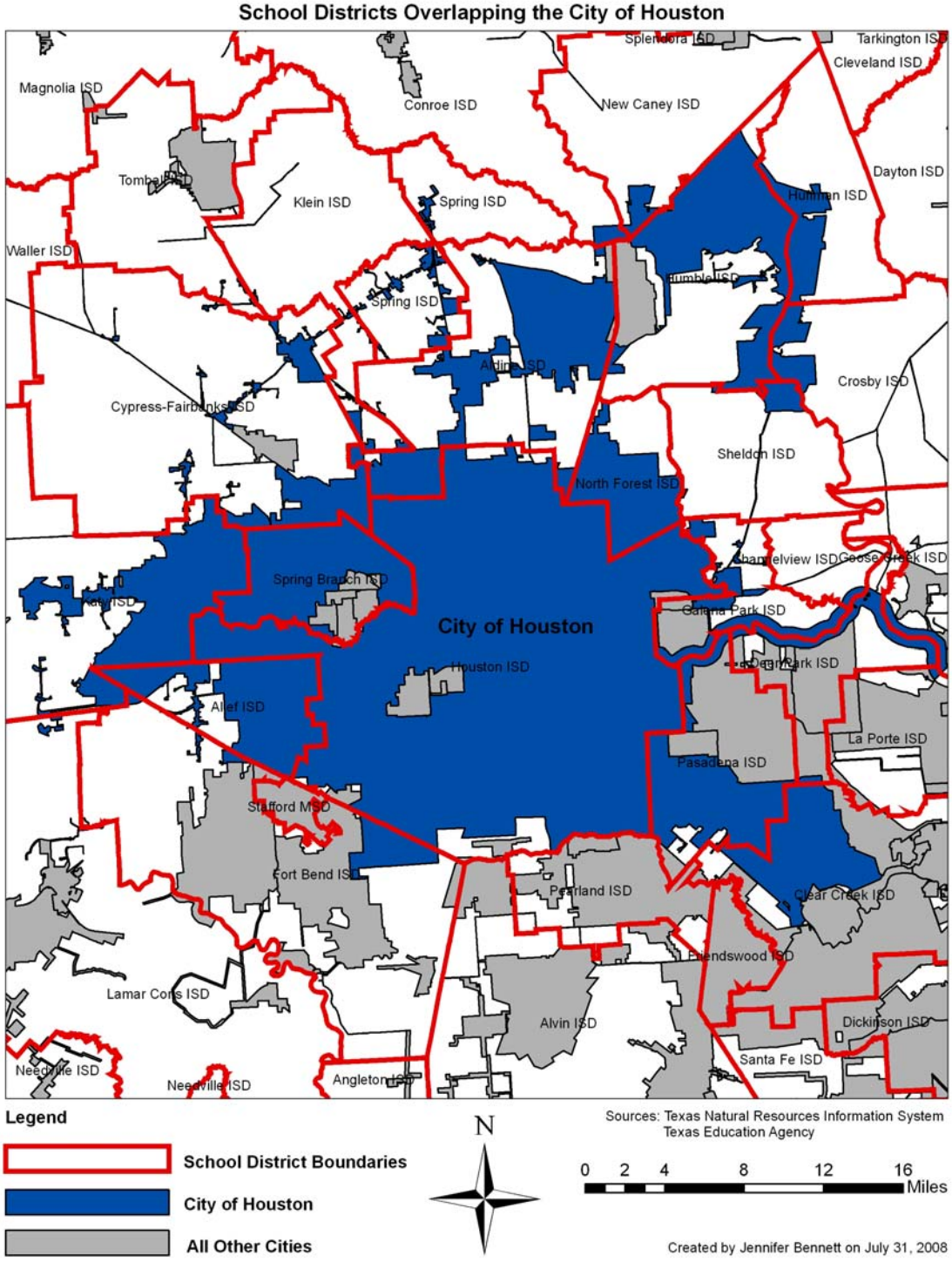
guiding school districts and communities through the school facility planning process.

STUDY LIMITATIONS AND FUTURE RESEARCH

Some limitations to the interview data include the fact that all interviews were with school facility planning consultants, and thus, these types of consultants have more of a bias towards school districts. Furthermore, this research is qualitative in nature, and the results are not easily quantifiable. However, some basic quantifiable information is present in the background information in order to show some level of comparison. Lastly, although the researcher tried to select a diverse group of participants, perhaps more types of engineers, demographers, or contractors may have offered more insight. The researcher interviewed four architects, because overall, more architects are a part of CEFPI and are usually considered the most important consultants. Moreover, the interviews were already very in-depth, and thus, more than ten interview participants would have potentially required the assistance of more researchers.

Future research in this area may include more quantifiable studies in the form of surveys of school facility planning consultants. However, the point of this research is to offer a view of school facility planning, school siting, and local government and school district collaboration through the eyes of private sector consultants. It was not intended as an “end all, be all” to the existing literature on school facility planning. As such, it offers simply a different flavor of analysis based on the experiences of the experts involved.

APPENDIX A


School Districts Overlapping the City of Houston
Splendora ISD
Tarkington ISD
Cleveland ISD
Magnolia ISD
Conroe ISD
New Caney ISD
Dayton ISD
Tomball ISD
Klein ISD
Spring ISD
Waller ISD
Spring ISD
Crosby ISD
Cypress-Fairbanks ISD
Sheldon ISD
North Forest ISD
Channelview ISD
Spring Branch ISD
City of Houston
Houston ISD
Galena Park ISD
Alief ISD
La Porte ISD
Pasadena ISD
Stafford MSD
Fort Bend ISD
Pearland ISD
Clear Creek ISD
Friendswood ISD
Lamar Cons ISD
Alvin ISD
Dickinson ISD
Santa Fe ISD
Needville ISD
Angleton ISD
Legend
School District Boundaries
City of Houston
All Other Cities
N
Sources: Texas Natural Resources Information System
Texas Education Agency
0 2 4 8 12 16
Miles
Created by Jennifer Bennett on July 31, 2008

APPENDIX B

Holistic Planning Process

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Phase I Assessments

Facilities' Appraisal
- Survey with Appraisal Instrument
- Interview staff, Board of Trustees, Students, and Community leaders

Program Evaluation
- Examine Program Offerings
- Determine Future Program Needs

Demographic and Economic Analysis
- Area Economic Trends
- Area Demographic Trends
- Student Enrollment Projections

Community Beliefs and Expectations
- Interview staff, teachers, and students
- Interview Board of Trustees, community leaders, and parents
- Review history of school district

Phase II Master Plan Development

Review Assessments (Where We Are Now)

Establish Community Facilities' Advisory Committee
- Identify representatives from the community
- Appointment of Committee by Board of Trustees
- Charge and challenge from Board and Superintendent

Confirm Community Beliefs and Expectations (Where Do We Want To Be and How Do We Get There)
- Beliefs
- Assumptions
- Guiding Principles

Examine Alternatives and Options

Determine Through Consensus the Best Option

Determine Cost Estimate of Projects (Work with School Architect)

Consider Funding Sources

Phase III Marketing Plan Development and Implementation

Board of Trustees Review, Approve or Modify Facilities Master Plan Submitted by Community Advisory Committee

Formation of a Bond Advisory Committee
Bond Advisory Committee Develops Bond Campaign Plan
Bond Campaign Committee Structure
- Coordinating or Steering Committee
- Citizen's Action Committee
- Finance/Fund Raising Committee
- Education Committee
- Voter Identification and "Get Out the Vote" Committee
- Publicity

Phase IV Implementation and Construction Plan
Determine Project(s) Implementation Schedule
Develop Educational Plans and Specifications
Project Design Team Works on Preliminary Design
Architects Complete Design, Development, Construction Documents, Bids, and Awards
Project Construction and Completion of Projects

Phase V Evaluation Plan
Post Occupancy Evaluation
- Educational Programs
- Education Facility
Reassess Facilities Master Plan

APPENDIX C

Pfluger Associates Architects

SCHOOL SITE EVALUATION FORM

Date Reviewed				
EVALUATION CRITERIA	SITE ONE _____	SITE TWO _____	SITE THREE _____	SITE FOUR _____
SIZE AND USABLE AREA				
CONFIGURATION AND ORIENTATION				
ACCESSIBILITY				
SAFETY AND TRAFFIC FLOW				
DEMOLITION				
UTILITIES TO SITE (ACCESSIBILITY)				
SITE PREPARATION				
DRAINAGE AND PROTECTION FROM GROUND WATER				
SUBSOIL COMPOSITION (FOUNDATION COSTS)				
EASEMENTS AND RESTRICTIONS				
ZONING				
AMENITIES (VIEWS, NOISES, ETC.)				
ENVIRONMENTAL IMPACT				
IMPACT OF ANTIQUITIES				
MISCELLANEOUS SITE PREPARATION COSTS				
COMPOSITE RATING				

APPENDIX D

Pfluger Associates Architects

SCHOOL SITE SELECTION

School sites should always be considered in terms of long-range use. Land should be purchased to provide for future growth on the campus. Purchasing additional land adjacent to the site in the future will almost always be more expensive than the initial purchase.

SITE CRITERIA FOR SCHOOL USE

1. Size and Usable Area: In determining the necessary or desirable site size, several factors need to be taken into consideration. First, it is assumed that, when talking about site size, the reference is to usable site area or acreage that can be made usable through some reasonable improvement. Then the building configuration (i.e., the amount of space that will be required simply to accommodate the school) is the most important factor, followed closely by land needs for parking, circulation patterns around the facility, and playfields.

   Too large an estimate of needed site acreage could result in the disqualification of potential sites that are actually suitable. An even greater problem arises when a site is actually acquired that is too small for the school's needs. Sub-optimal building design or location on site may be the result, in addition to poor circulation patterns around the building, inadequate play areas, or other similar problems.

   It is important to consider the future expansion needs or the desire to eventually accommodate other facilities or functions on the site. Although the amount of land to be allowed for future expansion cannot be precisely determined, some space certainly should be provided.

   TEA Site Recommendations:

Elementary:	10 acres plus one acre for each 100 pupils
Middle (Junior):	20 acres plus one acre for each 100 pupils
High School:	30 acres plus one acre for each 100 pupils

2. Configuration and Orientation: In addition to being large enough, the site should be shaped to reasonably accommodate buildings, parking, drives, and playfields. A square or rectangular (not less than 1 to 3 ratio) site allows the greater freedom in design, placement of the facility, and in routing traffic to and through the site.

   Another concern is site orientation, the available options for placement of a building in relationship to surrounding features. For instance:

   - How does the site relate to nearby physical features such as hills, creeks, etc.?
   - For sites that are not square, is the long axis along a road so that site access is suitable?
   - Is the site oriented so that the structure can take advantage of natural features such as the natural breeze ventilation, daylight, freedom from sun and north wind for efficient heating, lighting, and cooling of the building?
   - Can a building be erected on the site that can be seen easily from nearby streets and roads?

   Each of these factors is not likely to be of great importance individually; however, combined, they could have some impact on the overall suitability of a school site.

3. Accessibility: Safe, easily accessible by student population by auto, school bus, and even pedestrians and bicycles, if possible.

A major road or highway is typically the means of access to a school. The ideal site would locate the school close enough to the highway for easy access, but not so close that noise and congestion interfere. Street access to two or more sides of the site is desirable.

Development costs for access easements/rights-of-way, drives, etc., should be included in the site cost evaluation.

4. Traffic Flow: Potential traffic pattern for buses and auto/students and staff should be considered; necessary separate drives, parking, service, etc. Main access to the site should not be at a blind curve, top of a hill, or along a single lane highway with high speed traffic.

5. Demolition: If any of the potential sites have buildings or other improvements on them that must be removed, the cost of demolishing the buildings and removing the debris from the site needs to be identified and included as a cost of preparing the site. This can be done in two ways:

   1) Ask for a bid on the work to be done.
   2) Ask for a standard unit cost for demolition and hauling (typically expressed as a cost per cubic yard) and then apply the unit demolition cost to the volume of the buildings to be removed.

6. Utilities: The cost for bringing water, sewer lines, electricity, and natural gas (if it is going to be used) to the site needs to be determined as accurately as possible and included in the total cost of each site.

   For electric and gas services, representatives of those utilities should be able to provide prices (i.e., the cost to the school for running the necessary lines to the site). Alternatively, these representatives should provide a cost per linear foot for running the lines so that the total cost can be determined.

   The cost for water and sewer services could be more difficult to determine and could result in great variation in cost among the sites. In particular, the cost for accessing existing sewer lines may vary. Depending on the location being considered, a requirement may exist for the school to have pumping capability to move the sewage to an appropriate place in the municipal system. If a sewer system is not available for connection, then the cost of a complete septic system or mini self-contained sewage treatment plant must be allowed. Environmentally sensitive areas may require a gray water sewage treatment system.

7. Site Preparation: The contour of some sites may need to be modified before construction can begin by grading away high spots, filling low spots, or both. On an undeveloped site, trees and other foliage may need to be cleared away to make the site suitable for building construction, parking, and playfields.

8. Drainage and Protection from Ground Water and Watershed Impact: Ground water levels and/or site topography may result in special drainage problems on some sites. In dealing with potential water problems on a site, it should be kept in mind that, although a site may look perfectly suitable for building during the dry summer months, there may be a serious problem in the spring or other wet times of the year. Every site needs to be carefully evaluated for water-related features and the year-round characteristics need to be taken into account. Ideally, the site should have a gentle slope to facilitate natural drainage. Consideration needs to be given to runoff water and any impact it may have on adjacent property and the nearby watershed area.

   The cost of remedying water problems, either through construction of a special drainage system or by waterproofing basement and foundation walls, needs to be estimated and included as part of the comparative site costs.

9. Unusual Foundation Costs: The density and type of subsoil composition can vary widely among sites, even within the same general area. Subsoil characteristics can have significant implications for the foundation and footings that will be necessary in order to erect the planned structure. Test borings should be taken by a qualified professional so that each site can be evaluated in terms of its particular foundation requirements.

   On some sites, an extensive series of borings may be required because of variations in conditions even over a site of only ten acres. Conditions on a single site may influence the placement of the main structures, as well as affect the foundation cost. Subsoil conditions can vary from hard rock just below the surface to a stable surface at 30 feet or deeper. The real subsoil problems come from a wide variety of conditions, such as highly expansive clay, complete voids/caverns, old land fill or garbage dump areas, underground water streams, etc.

10. Easements and Restrictions: Almost all potential sites will have some restrictions that limit their flexibility for master site planning and development. Some of these restrictions are in the form of an easement, which is the right of someone other than the property owner to use the property for some purpose. The most common form of easement is the right of a utility company to use property to install and service equipment such as power and telephone lines. Identification of easements can be done by contacting the relevant utilities, reviewing a site survey, and/or examining the title to the property. The school's legal counsel can also help to make certain that all easements relating to a site have been identified.

    Physical restrictions, such as streams or general terrain, can also limit the usefulness of a potential site. Such restrictions are usually evident from physical inspection of the site; however, some, such as the location of a site in a flood plain, may require further investigation to determine impact.

    Easements will rarely make a site unsuitable unless high pressure gas or high voltage electric transmission lines may present major environmental concerns. Natural site restrictions can often be accommodated through grading, special drainage, and other techniques. The need for such an accommodation could, however, result in disqualification of a site through high development costs.

11. Zoning: Zoning has implications for the suitability of a potential site. First, it needs to be determined whether the site under consideration is zoned so that a school can be built. If the site is not zoned appropriately, it needs to be determined whether the tract can be rezoned and, if so, how long the process will take and what the attendant expense will be. Having property zoned so that a school can be constructed usually does not pose a problem. If the site is in an existing residential area, there may be rezoning problems, but such a site would likely have other more serious limitations (such as size or poor access). The site should be away from hospitals, factories, railroads, and business centers.

12. Amenities: View, Noises, Odors: Just as attractive surroundings are important to individuals, they are important to the school. The area surrounding the site should look nice or, at least, not be objectionable. The area should not be subject to frequent loud noises or unpleasant odors. The potential sources of noise and odor can usually be identified by inspection of the site and include sources such as factories, airports, and busy highways. A view, both close range and distant, is a more subjective consideration and it includes both the absence of bad views (deteriorated buildings) and the presence of attractive features, such as vegetation or interesting topography. Natural resources such as trees, if in the proper location on the site for development, are valuable assets.

    Only in rare circumstances would a site be disqualified because of the site amenities feature. However, all other things being equal, the site should be as attractive as possible.

13. Environmental Impact: A factor that has recently become important in site selection is the physical impact that the presence of the school building and related features, such as roads, could have on the site and surrounding area. In some circumstances, a formal environmental impact statement may be required by

the government. Even when no such formal statement is required, the potential environmental impact should be considered in site selection. Local ordinances and regulations may exist that are concerned with these issues. The site needs to be studied by a separate environmental consultant to verify that it has no old land fills or dump sites, underground gas or storage tanks, or that is was used as an above-ground chemical storage area that might have contaminated the soil.

A potentially significant negative impact on the environment could exist when a river or lake is on or near the site because the risk of discharging waste into the waterway, even by accident, exists. Another potential problem arises when the site is heavily contoured and excavating for construction would cause or aggravate soil erosion or cause damage to a desirable natural terrain feature, such as a hill or a cliff.

14. Impact on Antiquities: Any proposed site needs to be reviewed for the possible location of existing antiquities. These might include Indian camp sites and other archeological relics and historical sites.

15. Miscellaneous Preparation Costs: Any costs not previously listed, but that would be different from site to site are not included in the construction budget, need to be identified and qualified so that an accurate budget can be prepared and a meaningful comparison made. Different sites could have different implications for insurance premiums or other fees and costs. Availability of fire and police protection are other possible considerations.

APPENDIX E

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EVALUATING THE TRUE COST OF LAND FOR SCHOOL PROJECTS

1. Land (Physical Characteristics)

- **Location**
  - *Demographics*
  - *Availability of Land*
  - *Jurisdictional Control*
    - Development Restrictions
    - Permit Fees
    - Platting
- **Size of Site (Acreage)**
  - *Facility Needs*
  - *Configuration*
  - *Detention*
- **Access to Site**
  - *Availability of Roads*
  - *TxDOT Permits*
  - *Required Road Improvements*
    - Median Cuts
    - Turn Lanes
    - Road Widening
    - Deceleration Lanes
    - Traffic Signals
- **Environmental Impacts**
  - *Wetlands*
  - *Site Contamination*
  - *Geotechnical Factors*
    - Faults
    - Soil Conditions (Surface and Subsurface)
  - *Pipe Lines*
  - *Abandoned Wells / Active Drill Sites*
  - *Archeological Factors*
  - *High Power Transmission Lines Adjacent to Property*

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EVALUATING THE TRUE COST OF LAND FOR SCHOOL PROJECTS

- **Topography of Site**
  - *Lay of the Land*
    - Cut / Fill Requirements
    - Extensive Earthwork
    - Retaining Walls
- **Site Clearing / Demolition**
  - *Heavily Wooded / Forested*
  - *Building / Paving Demolition*
- **Flood Plain / Flood Way Impact**

2. Utilities / Services

- **Water Service**
  - *City / Utility District*
    - Impact Fees
    - Non-Taxing Entity Fees
    - Tap Fees
    - Extension of Water Service to Site
  - *Water Plant*
  - *Fire Protection (Fire Sprinkler)*
    - On-Site Fire Storage
    - Fire Booster Pumps
- **Sanitary Sewer Service**
  - *City / Utility District*
    - Impact Fees
    - Non-Taxing Entity Fees
    - Tap Fees
    - Extension of Sanitary Sewer Service to Site
  - *Wastewater Treatment Facility*

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EVALUATING THE TRUE COST OF LAND FOR SCHOOL PROJECTS

- **Electrical and Natural Gas Services**
  - *Adequate Power Availability (Infrastructure relative to site location)*
  - *Power Outage History*
  - *Availability of Natural Gas to Site*

3. Drainage

- **City / Utility District**
  - *Impact Fees*
  - *Non-Taxing Entity Fees*
  - *Extension of Storm Water System to Site*
- **Storm Water Detention**
  - *On-Site Detention Pond*
  - *Pump Station (if there is not adequate depth)*
  - *Mitigation (Off-Site Detention Pond)*
- **Storm Water Quality (BMP's)**

4. Discussion

APPENDIX F

SCHOOL SITE EVALUATION FORM

Site Name: _____

Site Acreage: _____

Land Cost: $ _____

	Comments:	Estimate of Associated Costs:
Location of Site:		
☐ Location / Keymap		
☐ Local Jurisdiction – City / County / ETJ		
☐ Drainage District		
☐ Utility District		
☐ Development Restrictions		
☐ Anticipated Permit Fees		
☐ Platting Required		
Access to Property:		
☐ Availability of Roads		
☐ TxDOT Permits Required		
☐ Required Road Improvements		
☐ Median Cuts		
☐ Turn Lanes		
☐ Road Widening		
☐ Deceleration Lanes		
☐ Traffic Signals		
Environmental Impacts:		
☐ Phase 1 Environmental Study		
☐ Wetlands		
☐ Hazardous Materials / Contamination		
☐ Geotechnical Factors		
☐ Faults		
☐ Soil Conditions (Surface and Subsurface)		
☐ Pipe Lines On or Adjacent to Site		
☐ Pipeline Company		
☐ Size and Depth of Pipeline		
☐ Abandoned Wells / Active Drill Sites		
☐ Archeological Factors		
☐ High Power Transmission Lines Adjacent to Site		
Topography of Site:		
☐ USGS Map		
☐ Floodplain (FEMA Map)		
☐ Floodway (FEMA Map)		

SCHOOL SITE EVALUATION FORM

	Comments:	Estimate of Associated Costs:
Site Clearing / Demolition:		
☐ Heavily Wooded / Forested		
☐ Building / Paving Demolition		
Water Service:		
☐ City / Utility District		
☐ Contact Information		
☐ Water Availability Pressure / Flow		
☐ Water Line Sizes		
☐ Estimated Impact Fees		
☐ Estimated Non-Taxing Entity Fees		
☐ Estimated Tap Fees		
☐ Extension of Service to Site Required?		
☐ Who Installs Meter / Meter Vault?		
☐ Fire Loop Required		
☐ Fire Storage Required		
Sanitary Sewer Service:		
☐ City / Utility District		
☐ Contact Information		
☐ Sewer Availability		
☐ Depth of sewer		
☐ Impact Fees		
☐ Estimated Non-Taxing Entity Fees		
☐ Estimated Tap Fees		
☐ Extension Service to Site Required?		
Electrical Service:		
☐ Contact Information of Provider		
☐ Adequate Power / 3 Phase Availability		
☐ Power Outage History		
Natural Gas Service:		
☐ Contact Information of Provider		
☐ Availability of Natural Gas / Pressure		
☐ Location of Natural Gas Line		

SCHOOL SITE EVALUATION FORM

Drainage:	Comments:	Estimate of Associated Costs:
☐ City / Utility District		
☐ Contact Information		
☐ Storm Sewer / Channel Out Fall		
☐ Depth of Storm Sewer / Channel		
☐ Extension of System to Site Required?		
☐ Estimated Impact Fees		
☐ On-Site Detention Pond Required		
☐ Additional Land Required		
☐ Mitigation (Off-Site Detention Pond)		
☐ Storm Water Quality (BMP) Required?		

Subtotal of Associated Costs..... $ _____

Summary:

TOTAL OF LAND AND ASSOCATED COSTS..... $ _____

TOTAL COST PER ACRE..... $ _____

TOTAL COST PER SQUARE FOOT..... $ _____

(One Acre = 43,560 square feet)

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